OECD Regions and Cities at a Glance 2018



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Foreword

OECD Regions and Cities at a Glance *shows how regions and cities are progressing toward stronger economies, better lives for people, and more inclusive societies. The report provides a comparative picture of trends in economic growth, productivity and entrepreneurship across regions and metropolitan areas. It also assesses how people's well-being is changing across regions, both within and across countries, including progress on closing gender gaps. This edition updates more than 40 region-by-region indicators to measure disparities within countries and their evolution since the turn of the millennium. The report covers all OECD member countries and, where data are available, Brazil, Peru, the Russian Federation, Tunisia and South Africa.*

There are several new areas of subnational data in this 2018 edition. The report now includes a chapter entirely focused on metropolitan areas. The title of the publication, which now includes the term "cities", reflects the increasing interest of readers in this scale of analysis. New indicators of inequality and poverty rates at this metropolitan scale are included. To assess the extent to which migrants are integrated locally, education and labour market outcomes of migrants at the regional scale have been created. Internationally comparable data on the creation and destruction of firms and the associated changes in employment at regional level is another new aspect of this edition.

The report is organised into five chapters plus statistical annexes. Chapter 1 provides an assessment of regional disparities in GDP, productivity and entrepreneurship. Chapter 2 paints a picture of well-being outcomes across OECD regions in a range of dimensions that matter for people. Chapter 3 focuses on demographic changes and integration of migrants in regions and includes sections on gender gaps. Chapter 4 provides an assessment of economic and social conditions in metropolitan areas, while Chapter 5 focuses on trends in investment and expenditure by subnational governments.

OECD Regions and Cities at a Glance 2018 *was produced by the OECD Centre for Entrepreneurship, SMEs, Regions and Cities, led by Lamia Kamal-Chaoui, Director as part of the Programme of Work of the Regional Development Policy Committee and its Working Party on Territorial Indicators. The report was co-ordinated and edited by Paolo Veneri, Head of the Territorial Analysis and Statistics Unit, under the supervision of Rudiger Ahrend, Head of the Economic Analysis, Statistics and Multi-level Governance Section. Lead authors for each of the chapters were Lukas Kleine-Rueschkamp (Chapter 1 and 4), Eric Gonnard (Chapter 2 and 4), Marcos Diaz-Ramirez (Chapter 3 and 4) and Isabelle Chatry (Chapter 5). Alexandre Banquet and Dimitrios Papaioannou (International Transport Forum) calculated the indicators pertaining to poverty and access to services in metropolitan areas, respectively. Milenko Fadic provided statistical input throughout the whole report. Comments provided by Kate Brooks, Soo-Jin Kim, Alexander Lembcke and Karen Maguire are gratefully acknowledged. Cicely Dupont-Nivore and Pilar Philip are kindly acknowledged for editing and preparing the report for publication. Damian Garnys and Janine Treves provided editorial assistance.*

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Editorial: Regions and cities – seizing their potential for stronger productivity and well-being

Current global megatrends – such as the digital transformation, climate change, migration or ageing – are likely to have a major impact on people's lives. Similar to the effects of globalisation that have characterised the last two decades, the consequences of these megatrends can be highly diverse not only across countries, but also across regions and cities within a given country. This differential impact will add to the already heightened concern of policy makers about disparities related to jobs and income, and thus ultimately well-being, across regions and cities. Economic differences within countries are indeed already cause for concern: within OECD countries, the most productive region is on average twice as productive as the least productive one. Fundamental changes to traditional local economic structures that, for example, the digital transformation will cause could further exacerbate such regional discrepancies.

Preparing for the challenges and opportunities of global megatrends while enhancing resilience and sustainable development across space requires action and policies that are adapted to the specific realities of where people live. *Regions and Cities at a Glance 2018* makes a critical contribution to this agenda by providing detailed, subnational data that reveal differences and diverse trends within countries that would be masked by national averages. The publication examines the most recent economic, social, and demographic developments in regions and cities across OECD and selected non-OECD countries, highlighting patterns of growth and progress in many aspects related to people's lives. Such information helps policy makers to prioritise actions to promote prosperity and cohesion in all places.

As engines of economic growth and innovation, cities and their residents will be at the forefront in making sure that future opportunities arising from global megatrends will benefit society at large and trickle down to all places. Cities are vital centres of entrepreneurship that have a significantly higher rate of firm creation than other places. New firms can help to provide innovative solutions and achieve the efficiency gains promised by automation and digitalisation. Nonetheless, closer links between cities and rural areas can be beneficial for both types of places thanks to knowledge spillovers and sharing of innovation, resources and amenities.

The assessment of well-being outcomes across OECD regions can help countries pursue policies that take into account the specific conditions of places and thereby provide adequate local solutions. While many aspects of quality of life have improved in the majority of regions, income and job opportunities are increasingly concentrated in specific regions. Young adults are particularly vulnerable in this regard. Youth unemployment is above 50% in certain regions of Southern Europe, demonstrating that finding a job can still be extremely challenging. Alleviating differences in living conditions becomes crucial to making our societies more prosperous and inclusive.

We are still at the beginning of the process of analysing and understanding how global megatrends will affect our societies. However, it is clear that opportunities and living conditions will continue to be different across regions and cities. In this light, *Regions and Cities at a Glance 2018* makes an important contribution by highlighting the most salient spatial discrepancies that need to be addressed to truly achieve stronger growth and more inclusive societies.

Lamia Kamal-Chaoui



Director, OECD Centre for Entrepreneurship,
SMEs, Regions and Cities

Executive summary

The maturing economic recovery from the global financial crisis has coincided with signs of a more widespread decrease in economic disparities within countries. Between 2000 and 2007, regional disparities within countries had increased. At the same time, low-income countries were catching up economically. This resulted in a situation – at the beginning of the global financial crisis – where disparities within countries surpassed those between countries. This trend has reversed since 2011, with disparities within countries falling significantly, especially in the last few years. The reversal occurred first in non-European countries, spreading only more recently to Europe where economic recovery had been delayed. In spite of these welcome improvements, regional disparities remain high in several respects.

During these different phases, capitals and metropolitan areas – the latter being urban agglomerations of at least 500 000 inhabitants – have continued to be highly attractive places for business and people alike. Metropolitan areas have increased their population by 0.75% per year since 2000 and now account for about 60% of national GDP. They also tend to have higher proportions of migrants and higher rates of innovation and firm creation.

Although we have recently seen a narrowing in differences between regions, many places that were already lagging behind in 2000 are still struggling to catch up with the more prosperous areas in their country. For example, the most productive region within a given OECD country is on average twice as productive as the least productive one and differences in job opportunities also remain substantial. Another problem is that, with subnational governments investing less than in the past, the capacity to maintain good infrastructure and public services is likely to be increasingly challenging in numerous regions.

This report provides a comprehensive assessment of how regions and cities fare in their efforts to build stronger economies, higher quality of life for their citizens, and foster more inclusive societies. It offers a comparative picture of trends in spatial productivity, economic growth, entrepreneurship, and well-being across regions and cities in the OECD and in selected non-member countries. It puts special emphasis on spatial inequalities, such as differences in income and opportunities, the integration of migrants in OECD regions, as well as on gender gaps in several well-being dimensions at the regional level.

Key findings

Regional economic disparities within OECD countries have finally started to come down, but remain at elevated levels

Economic disparities between the regions within a country have finally started to recede. They remain, however, at relatively high levels, with different countries experiencing different trends. Since 2000, economic gaps between regions have been stable or decreasing in half of

the OECD countries, but have been further increasing in the other half. For example, Chile, Mexico and New Zealand significantly narrowed regional economic disparities. In contrast, disparities for countries that were hit the hardest by the global financial crisis (e.g. countries in Southern Europe or Ireland) increased, albeit with some signs of a reversal in recent years.

Recent OECD work has identified drivers behind contrasting trends in spatial productivity within countries. On average, regions with a higher specialisation in the tradable sector – implying a higher exposure to international competition – or located in proximity to a city experienced faster catch-up to the most prosperous regions in their country. Rural regions close to a city, for example, have narrowed the productivity gap with urban regions by 3 percentage points since 2010.

In addition, capital regions have further increased their economic importance over the past two decades. As centres of entrepreneurship and innovation, enterprise creation and employment creation by new firms are more than 60% higher in capitals.

Many aspects of quality of life have improved nearly everywhere, but income and job opportunities remain concentrated in large cities and certain regions

In the vast majority of regions, several well-being dimensions have improved since 2000, contributing to narrowing regional gaps. This is particularly true for educational attainment, life expectancy, and safety. However, material aspects such as jobs and income have not improved everywhere. Finding a job remains considerably more difficult in certain regions. Young adults are especially affected, with youth unemployment rates still above 50% in some regions such as Epirus, Greece, and Calabria, Italy.

Challenges in the labour market directly affect income opportunities. For people living in metropolitan areas, income levels are 21% higher than for people living elsewhere; although price levels, in particular housing prices, also tend to be higher in larger agglomerations. For example, while households spend on average around 20% of their income on housing, housing expenditure can reach almost 40%, as in Oslo, Norway.

Inclusive growth requires dealing with inequalities across all spatial scales

Inequalities are found not only between, but also within all regions and cities. High inequalities can exclude people from job opportunities and thereby from the benefits of economic growth, which, as a consequence, can undermine long-term socio-economic sustainability. In metropolitan areas, inequalities can be particularly stark at the neighbourhood level, with the most affluent households living in a more isolated manner in specific neighbourhoods than other income groups. For more inclusive growth, it is fundamental that all people have access to opportunities, jobs and services. Access to services, for example, changes drastically even within the same metropolitan area. Some 87% of residents in central and densely populated neighbourhoods have access to hospitals within a 30-minute drive, compared to only 57% of residents in urban locations that are less central.

Promoting participation of all people in the generation of economic growth is important to fostering progress in all places. While gender gaps in employment rates have slightly decreased since 2000, in certain regions in Mexico, Turkey, Chile, Italy and Greece, female employment rates remain 20 percentage points below those of men. Among migrants in OECD regions, the employment rate of women is 15 percentage points lower than the rate for men. Given that a large part of inequality arises locally and with the bulk of their spending responsibilities typically in education, health and other social services, subnational governments have an important role in promoting inclusive growth.

Reader's guide

The organising framework

Regions and Cities at a Glance 2018 provides a comprehensive assessment of how regions and cities across the OECD are progressing towards stronger economies, a higher quality of life for their citizens and more inclusive societies. The publication provides a unique comparative picture in a number of aspects connected to economic development and living standards across regions and cities in OECD and in some non-OECD countries. More specifically, the report documents trends in GDP per capita, productivity, jobs and entrepreneurship (Chapter 1). The impact of such trends on people's lives is addressed in Chapter 2, which provides an updated and extended assessment of well-being across all OECD regions using consistent indicators about several aspects that matter for people's lives, including material conditions (income, jobs and housing) and quality of life (health, education, access to services, environment, safety, civic engagement and governance).

The report also provides an assessment of the extent to which regions and cities are able to promote and maintain cohesion among different groups of people (Chapters 3 and 4). In this respect, key inclusion aspects addressed in the report include new indicators for regions and cities on the integration of migrants, on gender gaps in several well-being dimensions and on inequalities that characterise regions, metropolitan areas and their neighbourhoods. Chapter 4 has a specific focus on cities across OECD countries, where cities are defined according to the OECD-EC functional urban areas. The latter consists of urban centres with high population densities, and adjacent municipalities with high levels of commuting (travel-to-work flows) towards the densely populated municipalities. The advantage of this definition is twofold: 1) it overcomes limitations to international comparability resulting from administrative boundaries, and 2) it is based on an economic approach rather than an administrative one. The term metropolitan area refers specifically to cities with more than 500 000 inhabitants. Chapter 5 provides an assessment of expenditure and investment by subnational governments and on how their investment capacity is evolving in recent years. It also provides an analysis of the sources of subnational government revenues as well as an overview of outstanding debt at subnational level.

Throughout the publication, regional economies and societies are looked at through two lenses: the distribution of resources and the persistence of disparities across regions and cities over space and time. More precisely:

- Distribution of resources over space is assessed by looking at the proportion of a certain national variable concentrated in a limited number of regions, corresponding to 10% or 20% of the national population and the extent to which specific regions contribute to the national change of that variable. For example, regional convergence in GDP per capita, measured by the annual growth rates in the bottom and top 10% of regions, only occurred

in half of OECD countries between 2011 and 2016. Metropolitan areas have contributed on average to 51% of total GDP growth since 2000.

- Regional disparities are measured by either the difference between the maximum and the minimum regional values in a country (regional range), or by the Theil general entropy index,[1] which reflect inequality among all regions. In Turkey, Spain and Italy, for example, the regional difference in unemployment rates was higher than 15 percentage points in 2017.

Geographic areas utilised

Traditionally, regional policy analysis has used data collected for administrative regions, that is, the regional boundaries within a country as organised by governments. Such data can provide sound evidence on the contribution of regions to national performance as well as on the persistence of disparities within a country. Data on administrative regions has also the advantage to refer to areas that are often under the responsibility of a certain subnational government or to the scale targeted by a specific policy implemented at national or subnational level. At the same time, the places where people live, work and socialise may have little formal relationship to the administrative boundaries around them. For example, a person may inhabit one city or region but go to work in another and, on the weekends, practice a sport in a third. A broad set of linkages, such as job mobility, production systems, or collaboration among firms, determines the interactions occurring between regions. These often cross local and regional administrative boundaries. The analysis, therefore, should take into consideration, in addition to the administrative boundaries of a region, its economic or social area of influence known as the **functional** area (Figure below). Especially in the case of large urban areas, the notion of functional urban area can better guide the way national and city governments plan infrastructure, transportation, housing, schools, and space for culture and recreation. In summary, functional urban areas can trigger a change in the way policies are planned and implemented, better integrating and adapting them to local needs.

Administrative and functional boundaries: Austin, Houston and Paris



Source: OECD calculations based on population density as disaggregated with Corine Land Cover, Joint Research Centre for the European Environmental Agency.

This publication features data for both administrative regions and functional urban areas according to international classifications, although the availability of data for the former is much more complete than for the latter.

Definition of metropolitan areas

The OECD-EU definition of functional urban areas consists of urban centres that are densely populated (at least 1 500 inhabitants per square kilometre) and adjacent municipalities with high levels of commuting (travel-to-work flows) towards the densely populated municipalities. This definition overcomes previous limitations for international comparability linked to administrative boundaries. A minimum threshold for the population size of the functional urban areas is set at 50 000. The definition is applied to 34 OECD countries and it identifies 1 124 urban areas of different sizes (see Figure A.2 in Annex A for the detailed methodology). It should be noted that, due to lack of commuting data, functional urban areas are not identified in Israel, New Zealand or Turkey.

The aim of this approach to functional urban areas is to create a methodology that can be applied across the whole OECD, thus increasing comparability across countries, unlike definitions and methodologies created within individual countries, which have been internally focused.[2] In order to establish this cross-country methodology, common thresholds and similar geographical units across countries were defined. These units and thresholds may not correspond to the ones chosen in the national definitions. Therefore, the resulting functional urban areas may differ from the ones derived from national definitions and in addition the OECD functional urban delimitation may not capture all the local factors and dynamics in the same way as national definitions.

This publication includes data on metropolitan areas, which are defined as the functional urban areas with a population of greater than 500 000. According to this methodology, there are 329 metropolitan areas in the 31 OECD countries corresponding, in 2015, to 55% of the total population of these countries.

Territorial level classification

Regions within the 35 OECD countries are classified on two territorial levels reflecting the administrative organisation of countries. The 389 OECD large (TL2) regions represent the first administrative tier of subnational government, for example, the Ontario Province in Canada. The 2 251 OECD small (TL3) regions are contained in a TL2 region. For example, the TL2 region of Aragon in Spain encompasses three TL3 regions: Huesca, Teruel and Zaragoza. TL3 regions correspond to administrative regions, with the exception of Australia, Canada, Germany and the United States.[3] All the regions are defined within national borders (See Annex A for the regional classification of each country).

This classification – which, for European countries, is largely consistent with the Eurostat NUTS 2013 classification – facilitates greater comparability of geographic units at the same territorial level.[4] Indeed, these two levels, which are officially established and relatively stable in all member countries, are used as a framework for implementing regional policies in most countries.

Due to limited data availability, labour market indicators in Canada are presented for groups of TL3 regions. Since these groups are not part of the OECD official territorial grids, they are labelled – for the sake of simplicity – as non-official grids (NOGs) in this publication and compared with TL3 in the other countries. Germany also has a NOG category with the 96 Spatial Planning Regions, an intermediate level between the 16 Länder (TL2) and the

402 Kreise (TL3). The German NOGs allow for a level of spatial disaggregation comparable to the other countries.

For the non-OECD countries in this report, only TL2 regions have been identified for Brazil, People's Republic of China, Colombia, India, Peru, the Russian Federation and South Africa, whereas for Lithuania, TL3 are derived from the European NUTS 3.

Regional typology

Traditionally the OECD has classified TL3 regions as predominantly urban (PU), intermediate (IN), or predominantly rural (PR) regions. This typology is mainly based on population density in each local unit, combined with the existence of urban centres where at least one-quarter of the regional population reside. An extended regional typology has been adopted to distinguish between rural regions that are located close to larger urban centres and those that are not. The result is a four-fold classification of TL3 regions: predominantly urban (PU), intermediate regions (IN), predominantly rural regions close to a city (PRC) and predominantly rural remote regions (PRR). The distance from urban centres is measured by the driving time necessary for a certain share of the regional population to reach an urban centre with at least 50 000 people (see Figure A.1 in Annex A for a detailed description of the criteria and the resulting classification of TL3 regions). Due to a lack of data, the extended typology has not been applied yet to Australia, Chile or Korea. In 2014, the European Union modified the rural-urban typology, using 1 kilometre population grids as building blocks to identify rural or urban communities, with the aim of improving international comparability; for the OECD-EU countries this rural-urban typology is presented in the publication.

While the rural-urban typology is calculated only for the lower territorial level (TL3) we are also interested in characterising TL2 regions according to the extent to which their population live in urban agglomerations or in low density areas. To this purpose, the share of the regional population living in functional urban areas is used to distinguish TL2 regions which are mostly agglomerated versus those that are mostly non-agglomerated. This classification has the advantage of overcoming the urban-rural split and better capturing the contiguity of urban and rural life. In this publication, a TL2 region is classified as mostly agglomerated if more than half of its population lives in a functional urban area located within the TL2 region. The classification of *mostly agglomerated TL2 regions* is not applied to Israel, New Zealand or Turkey as data on functional urban areas are not available for these countries.

Sources of data for territorial statistics

OECD Regions and Cities at a Glance 2018 includes a selection of indicators from the OECD Regional Database, the OECD Regional Well-Being Database, the OECD Metropolitan Areas Database and the OECD Subnational Government Finance Database. For the first time this edition of the publication presents comparable indicators on the creation and destruction of firms in regions and on the jobs generated by those dynamics. The report also presents new indicators on the integration of migrants across OECD regions, based on labour force survey data in OECD countries. Finally, the report presents indicators on functional urban areas based on a different set of data sources specified in the Annexes of the publication and heavily relying on GIS estimation-based raster data organised in regular grids. Unless specified differently, indicators refer to functional urban areas as identified with updated boundaries in 2018, based on the most recent population and commuting data.

Most of the indicators presented in Chapters 1, 2 and 3 are referred to TL2 and TL3 regions and come from official national sources, following internationally-consistent methods for cross-country comparability. At the same time, regional and local data are increasingly available from a variety of sources: surveys, geo-coded data, administrative records, big data, and data produced by users. While countries have started to make use of the various sources to produce and analyse data at different geographic levels, significant methodological constraints still exist, making it a challenge to produce sound, internationally comparable statistics linked to a location. These constraints include both the varying availability of public data across OECD countries and the different standards used by national statistical offices in defining certain variables. Such constraints are even more daunting in non-OECD countries, where the production and usability of geo-coded information could be one solution to improve statistical evidence for different policy uses, such as the monitoring of Sustainable Development Goals. The trade-off between sound methodological estimations and international comparability should always be considered, as the latter depends on information that is universally available.

The indicators for the metropolitan areas presented in Chapter 4 are derived by integrating different sources of data, making use of GIS and adjusting existing regional data to non-administrative boundaries. Two types of methods to obtain estimates at the desired geographical level are applied, both requiring the use of GIS tools to disaggregate socio-economic data. The first method makes use of satellite datasets (global layers) at different resolutions, which are always smaller than the considered regions. The statistics for one region are obtained by superimposing the source data onto regional boundaries. In these cases, the regional value is either the sum or a weighted average of the values observed in the source data within the (approximated) area delimited by the regional boundaries. Because international standards for official statistics on environmental conditions in regions and cities do not exist, this method has been applied to estimate air pollution (population-weighted average of $PM_{2.5}$ levels) in metropolitan areas, TL3 and TL2 regions.

The second method makes use of GIS tools to adjust or downscale data, available only for larger geographic areas, to regularly spaced "grids" by using additional data inputs that capture how the relevant phenomenon is distributed across space. With this method, GDP, employment and unemployment have been estimated in metropolitan areas, when those statistics were not already provided by official sources (see Annex C for details on the methods to estimate indicators for metropolitan areas).

GIS-based methodologies were used to estimate not only environmental, but also socio-economic indicators (GDP and labour market), because these methods are less dependent on the type of information available in the different countries and, therefore, they enable good comparability of results among metropolitan areas in different countries. However, GIS-based methodologies lack of precision for some estimates and it is difficult to assess change over time for a number of variables.

The data of Chapter 5 refer to subnational governments, as classified according to the General Government Data of the OECD National Accounts. Subnational governments are defined as the set of states (relevant only for countries with a federal or quasi-federal system of government) and of local (regional and local) governments.

Further resources

The interactive web-based tool *www.oecdregionalwellbeing.org/* allows users to measure well-being in each region, compare it against 398 other OECD regions and monitor progress over time. Each region is assessed in eleven areas central to quality of life: income, jobs, health, access to services, environment, education, safety, civic engagement, housing, social support network, and life satisfaction.

The different topics are visualised through interactive graphs and maps with a short comment. Users can also find the *Regional eXplorer* and the *Metropolitan eXplorer* at this website, where they can select from among all the indicators included in the OECD Regional and Metropolitan Areas databases and display them in different linked dynamic views such as maps, time trends, histograms, pie charts and scatter plots. The website also provides access to the data underlying the indicators and to the OECD publications on regional and local statistics.

The cut-off date for data included in this publication was May 2018. Due to the time lag of subnational statistics, the last available year is generally 2017 for demographic and labour market, 2016 for subnational finance data and 2015 for entrepreneurship, innovation statistics and social statistics in metropolitan areas.

Acronyms and abbreviations

	Description
Australia (TL2)	TL2 regions of Australia
Australia (TL3)	TL3 regions of Australia
COFOG	Classification of the Functions of Government
GDP	Gross domestic product
FUA	Functional urban areas
IN	Intermediate (region)
LFS	Labour force survey
MA	Metropolitan area (functional urban area with a population of more than 500 000)
NEET	Adults neither employed nor in education or in training
NOG	Non-official grid
OECD#	The sum of all the OECD regions where regional data are available (# number of countries included in the sum)
OECD# average	The weighted mean of the OECD regional values (# number of countries included in the average)
OECD#UWA	The unweighted mean of the country values (# number of countries included in the average)
PCT	Patent Co-operation Treaty
$PM_{2.5}$	Particulate matter (concentration of fine particles in the air)
PPP	Purchasing power parity
PR	Predominantly rural (region)
PRC	Predominantly rural (region) close to a city
PRR	Predominantly rural remote (region)
PU	Predominantly urban (region)
R&D	Research and development
SNG	Subnational government
TL2	Territorial level 2
TL3	Territorial level 3
Total # countries	The sum of all regions where regional data are available, including OECD and non-OECD countries

OECD Country codes

Code	Country
AUS	Australia
AUT	Austria
BEL	Belgium
CAN	Canada
CHE	Switzerland
CHL	Chile
CZE	Czech Republic
DEU	Germany
DNK	Denmark
ESP	Spain
EST	Estonia
FIN	Finland
FRA	France
GBR	United Kingdom
GRC	Greece
HUN	Hungary
IRL	Ireland
ISL	Iceland

Code	Country
ISR	Israel
ITA	Italy
JPN	Japan
KOR	Korea
LUX	Luxembourg
LVA	Latvia
LTU	Lithuania
MEX	Mexico
NLD	Netherlands
NOR	Norway
NZL	New Zealand
POL	Poland
PRT	Portugal
SVK	Slovak Republic
SVN	Slovenia
SWE	Sweden
TUR	Turkey
USA	United States

Other countries ISO codes

Code	Country
BRA	Brazil
BGR	Bulgaria
CHN	China, People's Republic of
COL	Colombia
IND	India

Code	Country
PER	Peru
ROU	Romania
RUS	Russian Federation
TUN	Tunisia
ZAF	South Africa

Note on Israel: The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Note on Colombia: On 25 May 2018, the OECD Council invited Colombia to become a Member. At the time of publication the deposit of Colombia's instrument of accession to the OECD Convention was pending and therefore Colombia does not appear in the list of OECD Members and is not included in the OECD zone aggregates.

Notes

1. With the *α* coefficient equal to 1.
2. Some OECD countries have adopted a definition for their own metropolitan areas or urban systems that looks beyond the administrative approach. For example, Australia (Australian Bureau of Statistics, 2012), Canada (Statistics Canada, 2002) and United States (U.S. Office of Management and Budget, 2000) use a functional approach similar to the one adopted here, to identify metropolitan areas. Several independent research institutions and National Statistical Offices have identified metropolitan regions in Italy, Spain, Mexico and United Kingdom based on the functional approach.
3. The U.S. TL3 regions are based on the Bureau of Economic Analysis' Economic Areas. For the latest information on the methodology, please refer to: *https://www.bea.gov/scb/pdf/2004/11November/1104Econ-Areas.pdf*
4. For European countries, the Eurostat NUTS 2 and 3 classifications correspond to the OECD TL2 and 3, with the exception of Belgium, Germany and the United Kingdom where the NUTS 1 level corresponds to the OECD TL2.





1. REGIONS AS DRIVERS OF NATIONAL COMPETITIVENESS

Changing patterns of regional disparities

Regional economic disparities and regional convergence

Productivity differences and productivity growth in regions

Where do productivity gains occur?

Spatial productivity differences within and across regions

Innovation in regions: R&D and patents

Entrepreneurship in regions

Rural-urban differences in firm creations

Capital regions as drivers of economic activity and firm creations

New firms' employment creation in regions

The data in this chapter refer to regions in OECD and non-OECD countries. Regions are classified on two territorial levels reflecting the administrative organisation of countries. Large (TL2) regions represent the first administrative tier of subnational government. Small (TL3) regions are contained in a TL2 region.

Changing patterns of regional disparities

Compared to their peak at the beginning of the economic crisis, regional economic differences within countries have started to decline.

Since the end of the global financial crisis, regional economic disparities within countries have fallen (Figure 1.1). Comparing all large (TL2) regions of the OECD, regional disparities in GDP per capita remain significant but their nature and composition are changing. In the early 2000s, regional disparities in per capita income across countries clearly surpassed regional differences within countries. In a context of higher growth in low-income countries, regional disparities within countries increased between 2000 and 2007 and thus eventually became relatively more important than regional disparities across countries. Since 2011, faster growth in high per capita income countries reversed the trend. Regional disparities across countries rose again whereas within-country disparities decreased significantly. As a consequence, the relative importance of within-country discrepancies in 2016 is lower than it was in 2000. Overall, in the 16 years since 2000, total regional discrepancies in the OECD decreased by around 18%.

A common phenomenon across the OECD is the high and increasing economic importance of capital regions (Figure 1.2). On average, they account for more than 26% of national GDP. The median share of capital city regions' contribution to their respective country's GDP increased by almost 12% (i.e. 2.8 percentage points) between 2000 and 2016. The increase in capital regions' contribution to GDP was largest in Norway, where it grew by 21% between 2000 and 2016. In contrast, in Mexico the share of national GDP generated in the capital region fell by 8%.

Definition

The Theil index measures inequality in GDP per capita between all TL2 OECD regions. It breaks down the overall inequality into inequality due to differences within countries and inequality due to discrepancies across countries. See Annex C for further details.

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

TL2 regions in 1.1 and 1.2

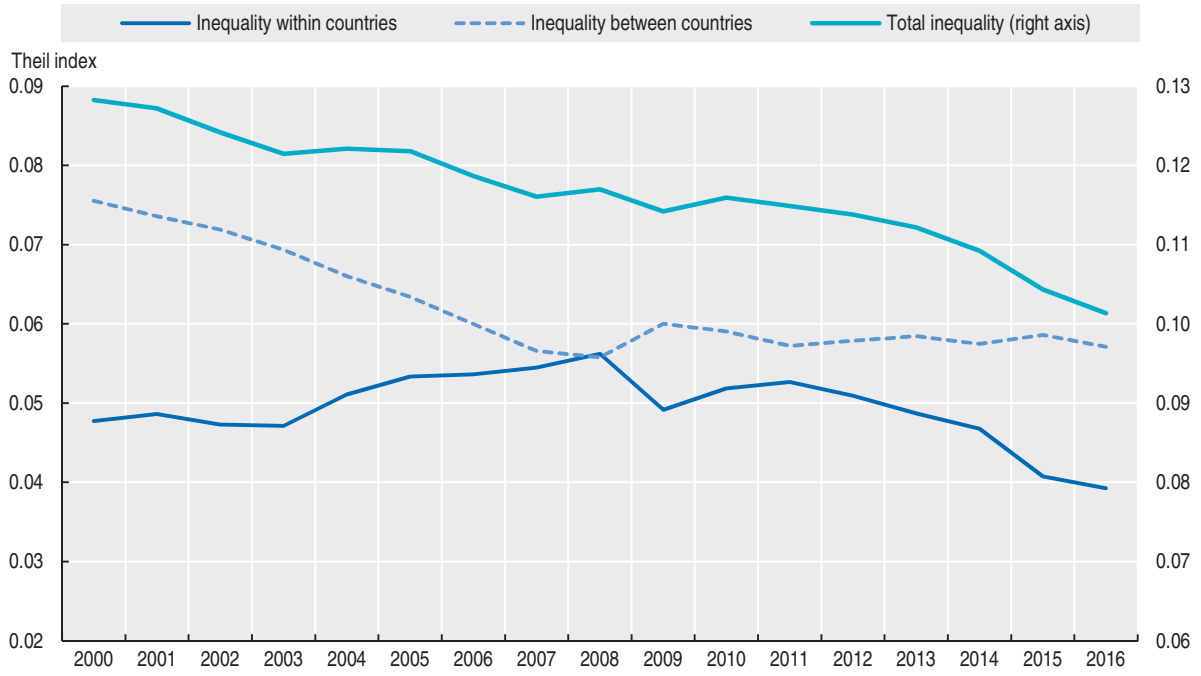
Figure notes

1.1: 31 countries considered: TL2: AUS, AUT, BEL, CAN, CHL, CZE, DEU, DNK, ESP, FIN, FRA, GBR, GRC, HUN, IRL, ITA, JPN, KOR, MEX, NLD, NOR, NZL, POL, PRT, SVK, SVN, SWE, USA ; TL3: EST, LVA, LTU.

1.2: countries considered: AUS, AUT, BEL, CAN, CHL, CZE, DEU, DNK, ESP, FIN, FRA, GBR, GRC, HUN, ITA, JPN, KOR, MEX, NLD, NOR, NZL, POL, PRT, SVK, SWE, USA.

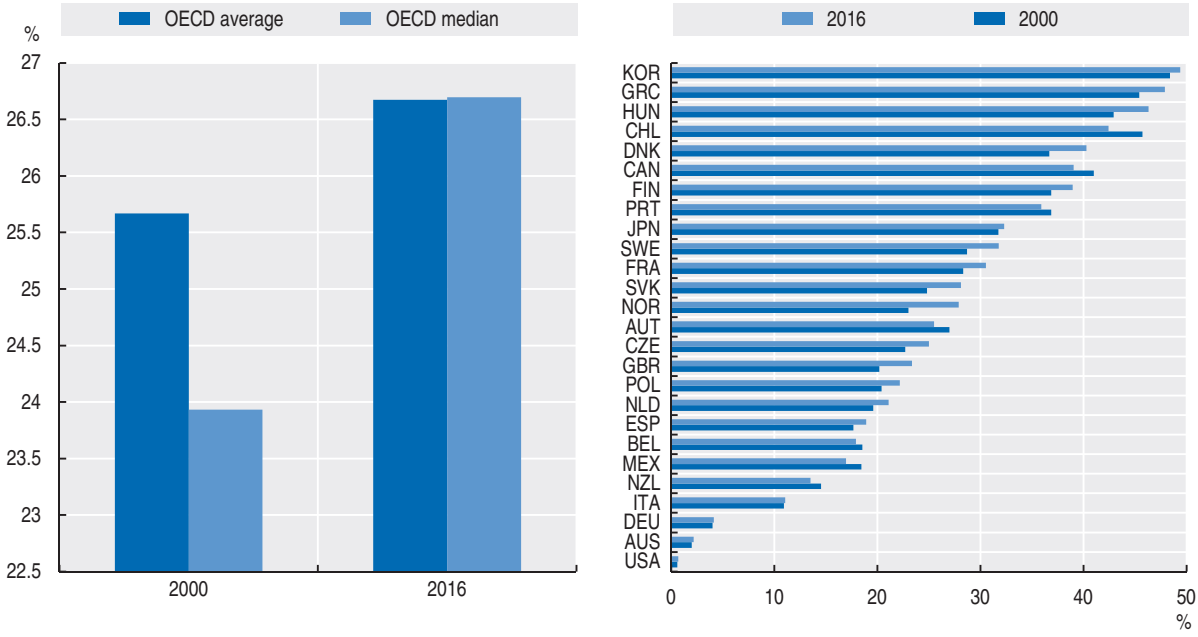
1.1. Regional disparities across the OECD, TL2 regions

Theil inequality index of GDP per capita



StatLink http://dx.doi.org/10.1787/888933816364

1.2. The contribution of capital city regions to national GDP, TL2 regions



StatLink http://dx.doi.org/10.1787/888933816383

Regional economic disparities and regional convergence

Since 2011, regional differences in GDP per capita have increased in several European countries, such as in Ireland, United Kingdom and Czech Republic, while convergence occurred more strongly outside of Europe.

In most OECD countries, regional differences in gross domestic product (GDP) per capita remain significant. In 2016, the top 10% of regions in a country recorded on average a GDP per capita level that was more than twice as high as that of the bottom 10% of regions in the same country.

The interregional range of GDP per capita levels reveals large discrepancies (Figure 1.3). The greatest disparity in GDP per capita in 2016 is displayed in the United Kingdom, Germany, the United States, France and Switzerland. On average, GDP per capita was more than four times higher in the top region than in the bottom region in the same country (Figure 1.4). In the United Kingdom, the City of London had a per capita GDP that was 23 times higher than the Isle of Anglesey. In Germany, GDP per capita was more than eight times higher in Ingolstadt than in Südwestpfalz.

Regional convergence in GDP per capita, measured by the annual growth rates in the bottom and top 10% of regions, only occurred in half of OECD countries between 2011 and 2016. In 15 out of 30 countries considered, the bottom 10% recorded larger annual GDP per capita growth than the top 10% of regions (Figure 1.5). In Chile, Greece, Australia, and Canada, the bottom 10% of regions outpaced the respective top 10% by around 2 percentage points or more. However, regional convergence in GDP per capita was not universal. In 15 OECD countries regional disparities in GDP per capita increased between 2011 and 2016. Divergence was particularly pronounced in Ireland, Latvia, Estonia, and Poland, where annual growth in per capita GDP was more than 3 percentage points higher in the top 10% of regions.

Definition

GDP is the standard measure of the value of the production activity (goods and services) of resident producer units. Regional GDP is measured according to the definition of the System of National Accounts (SNA 2008). To make comparisons over time and across countries, it is expressed at constant prices (year 2010), using the OECD deflator and then it is converted into USD purchasing power parities (PPPs) to express each country's GDP in a common currency.

The GDP per capita of the top (bottom) 10% regions are defined as those with the highest (lowest) GDP per capita until the equivalent of 10% of national population is reached.

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

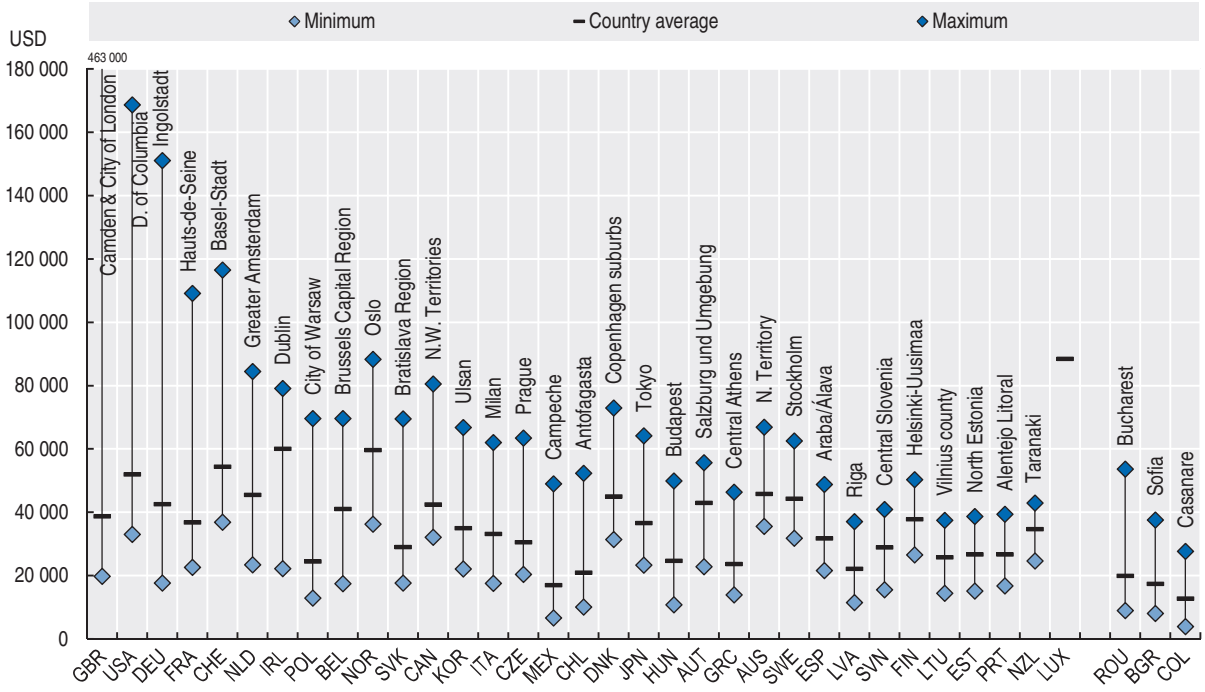
TL3 regions in 1.3 and 1.4; TL2 regions in 1.5.

Figure notes

1.3 and 1.4: 2016 or latest available year; Korea, New Zealand, Norway and Switzerland 2015; Japan 2014. TL3 regions; Australia, Canada, Chile, Mexico and United States, TL2 regions.

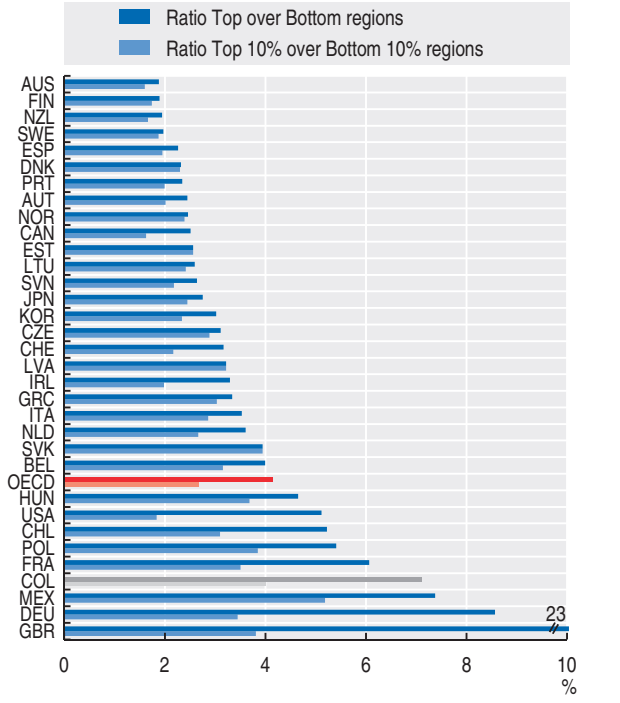
1.5: GDP per capita 2011-16 annualised growth rate. Switzerland, Korea, New Zealand and Norway 2010-15; Japan 2009-14. TL2 regions; Estonia and Latvia, TL3.

1.3. Regional disparities in GDP per capita, 2016, TL3 regions



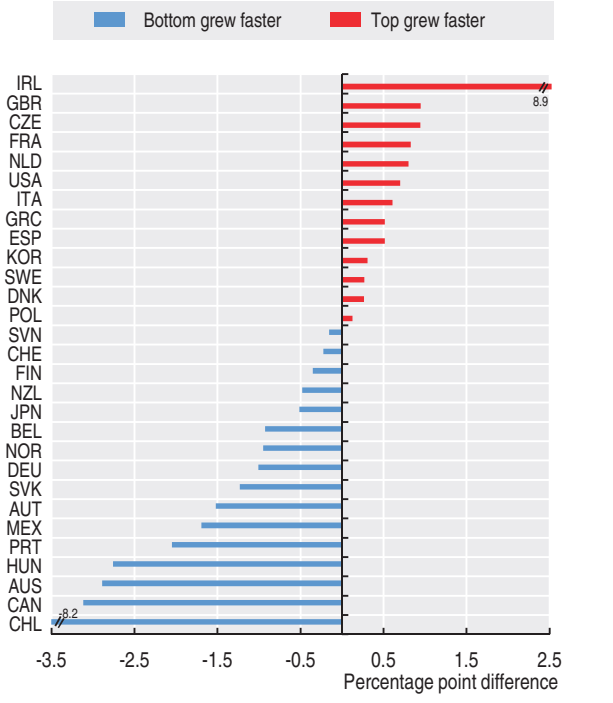
StatLink http://dx.doi.org/10.1787/888933816402

1.4. GDP per capita – ratio of top and bottom regions, 2016 (TL3)



StatLink http://dx.doi.org/10.1787/888933816421

1.5. Annual GDP per capita growth, difference between top and bottom 10% regions, 2011-16 (TL2)



StatLink http://dx.doi.org/10.1787/888933816440

Productivity differences and productivity growth in regions

In OECD countries the most productive region is, on average, twice as productive as the least productive region.

An essential component of disparities in regional income arises due to variation in regional productivity. Labour productivity, as measured by gross value added (GVA) per worker, differs substantially across and within countries (Figure 1.6). In many countries, such as Austria, Belgium, France, Norway, Sweden, United States etc., the capital region is where the highest regional labour productivity is generated. Overall, labour productivity is particularly high in regions with large service sectors as well as regions that benefit from access to natural resources (e.g. Campeche in Mexico or Antofagasta in Chile).

In most of Northern and Western Europe, average labour productivity in 2016 reached between USD 65 000 and USD 80 000 (in 2010 PPPs). Even in relatively productive countries such as France or Germany, there are regions that clearly lag behind in labour productivity (Figure 1.9). Similarly, countries with low average productivity have some areas that are highly productive. For example, in the Czech Republic, Poland, or Turkey where regional productivity is relatively low, the leading regions report higher labour productivity than the OECD average. Overall, spatial productivity differs widely within OECD countries. The gap in labour productivity between the most and least productive regions is larger than 30% in 26 of the 30 countries considered.

Between 2010 and 2016, most OECD regions recorded moderate annual productivity growth (Figure 1.7). In Turkey, Ireland, and Poland, regional productivity growth was, on average, relatively high with more than 2 percentage points per year. In contrast, on average, regions in Finland, Greece, Italy, and the United States stagnated or even deteriorated with respect to labour productivity. The largest within-country differences in productivity growth were recorded in Ireland, Mexico, the Netherlands, Turkey, and the United States. The two regions where productivity grew fastest annually were Central Anatolia - West and South (Turkey) and Southern and Eastern (Ireland) with rates of 8.9% and 6.9% in a context of national productivity growth rates of 5.9% and 3.8%, respectively.

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

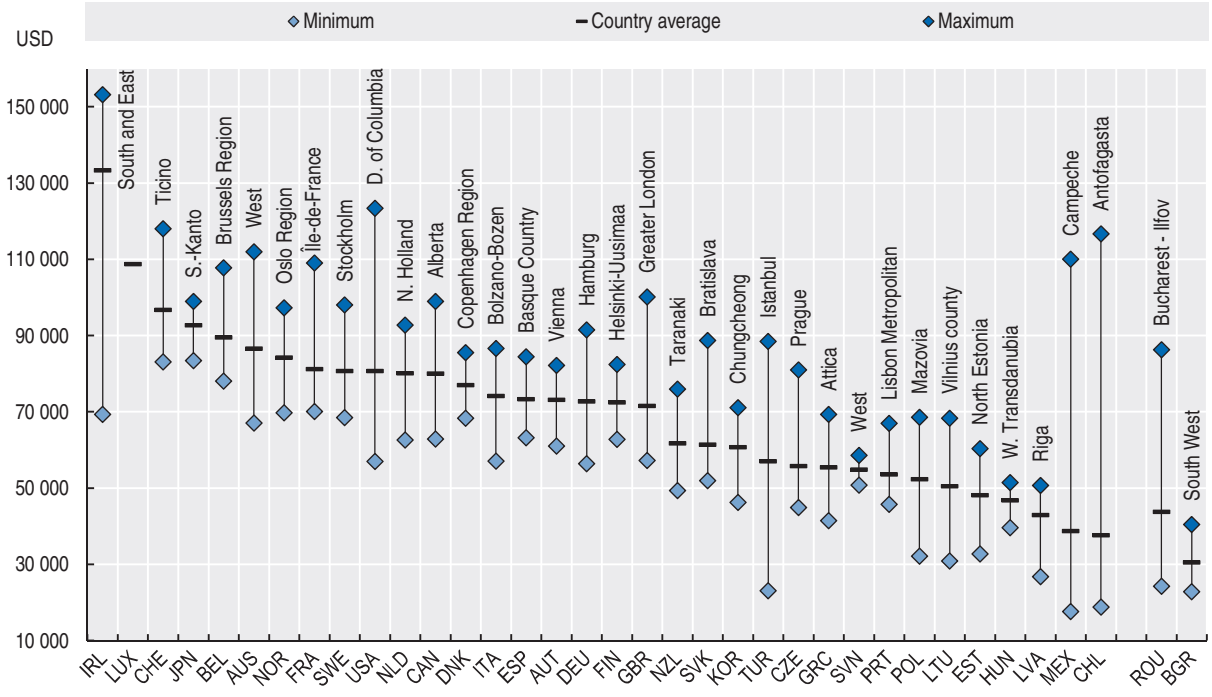
TL2 regions. Latest available year if 2016 is not available: Australia, Korea, Norway and United States, 2015; New Zealand and Turkey, 2014; Switzerland, 2013; Japan, 2012.

Figure notes

1.6, 1.8 and 1.9: labour productivity is measured as GVA per employed worker in constant 2010 USD. Norwegian country average excludes activities produced on the continental shelf.

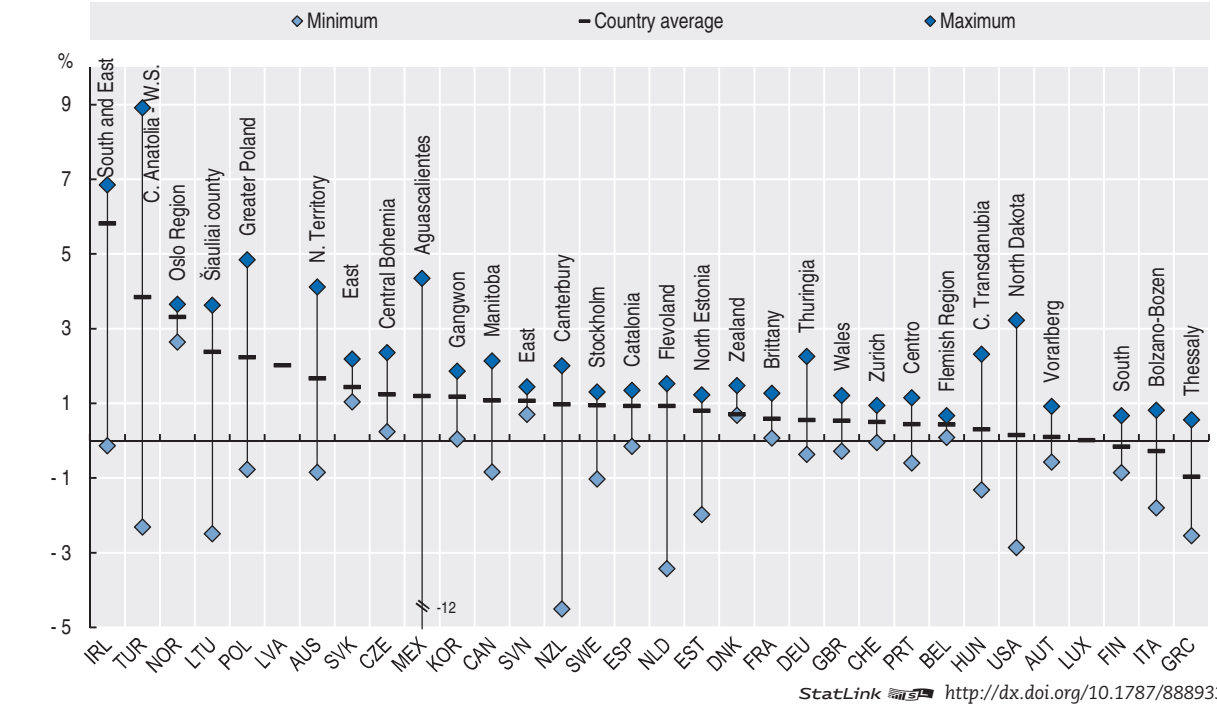
1.7: annual productivity growth calculated by compound annual growth rate.

1.6. Labour productivity in 2016, TL2 regions



StatLink http://dx.doi.org/10.1787/888933816459

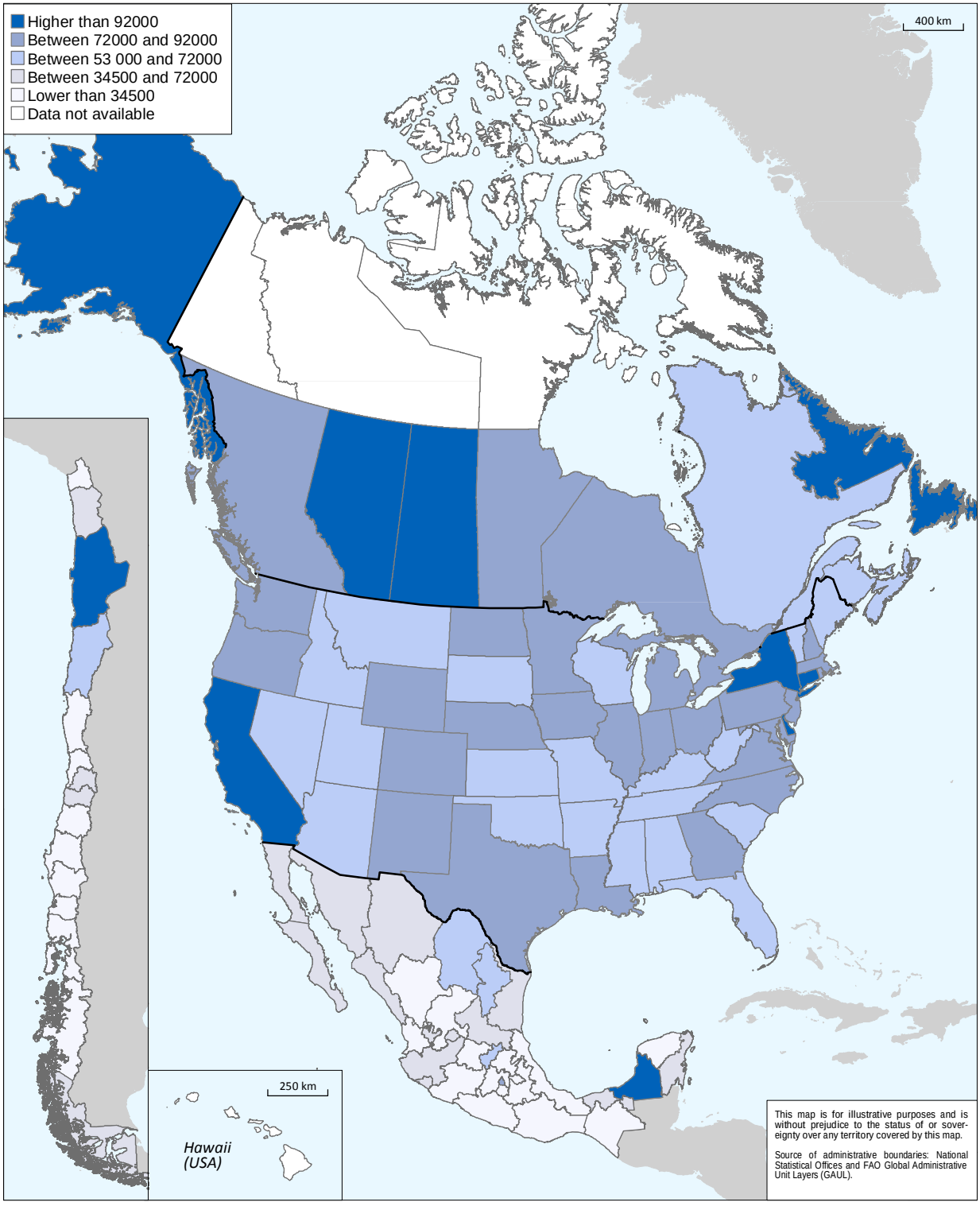
1.7. Annual productivity growth 2010-16, TL2 regions



StatLink http://dx.doi.org/10.1787/888933816478

1.8. Labour productivity across TL2 regions: North America and Chile, 2016

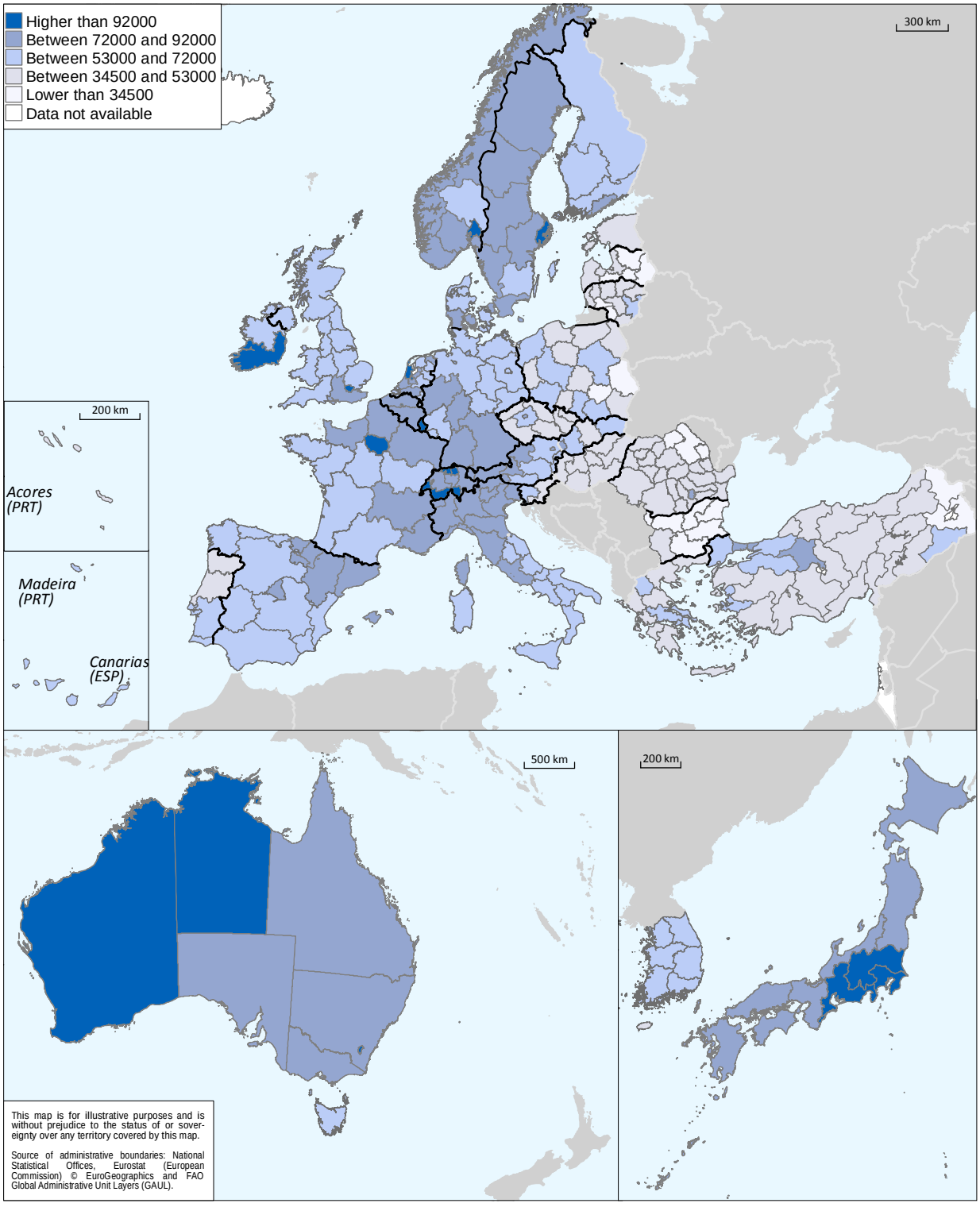
Gross value added per employee (constant 2010 USD PPP)



StatLink http://dx.doi.org/10.1787/888933816497

1.9. Labour productivity across TL2 regions: Asia, Europe and Oceania, 2016

Gross value added per employee (constant 2010 USD PPP)



StatLink http://dx.doi.org/10.1787/888933816516

Where do productivity gains occur?

In more than two-thirds of OECD countries, labour productivity converged between the least and most 10% productive regions, with rural regions located close to cities catching up.

In a majority of countries, the gap between the most and least productive regions narrowed between 2010 and 2016, i.e. they experienced convergence (Figure 1.10). Regional convergence in labour productivity occurred in 23 countries, with nine countries experiencing divergence. The largest catching-up by the least productive regions was recorded in Latvia, Chile, Lithuania, Turkey and Hungary. In contrast, Ireland and Estonia saw the largest increase in the gap between the most and least productive regions.

Predominantly rural regions still lag behind predominantly urban regions but they have narrowed the productivity gap (Figure 1.11). Rural regions close to cities have successfully narrowed the difference in their labour productivity levels versus urban regions by more than 3 percentage points, and now their labour productivity levels are equivalent to 82% of urban regions' productivity. Contrary to rural regions on average, those rural regions that are remote, i.e. far away from a big city, were not able to close the productivity gap between 2000 and 2015.

A stronger focus on the tradable sector allowed regions to experience higher productivity growth (Figure 1.12). Regions that generate a higher share of economic value (measured by GVA) from tradable sectors than their respective country grew annually by 1.1% between 2005 and 2015 while regions that specialised in non-tradable sectors grew by 0.8% per year. On average, productivity gains in the tradable sector were generated by firms becoming more productive while gains in the non-tradable sector occurred through a reallocation of employment from less to more productive activities (OECD 2018a).

Definition

Tradable sectors include ISIC Rev.4 sectors A (agriculture), B to E (industry), J (information and communication), K (financial and insurance activities), and R to U (other services). Regions are considered as concentrated on tradable sectors if the share of their GVA produced in tradable sectors is larger than the respective national share of GVA that is produced in tradable sectors.

The productivity of the top (bottom) 10% regions are defined as those with the highest (lowest) productivity until the equivalent of 10% of national employment is reached.

Source

OECD (2018a), Productivity *and Jobs in a Globalised World: (How) Can All Regions Benefit?*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264293137-en*.

OECD (2018b), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

TL2 regions in 1.10 and 1.12; TL3 regions in 1.11

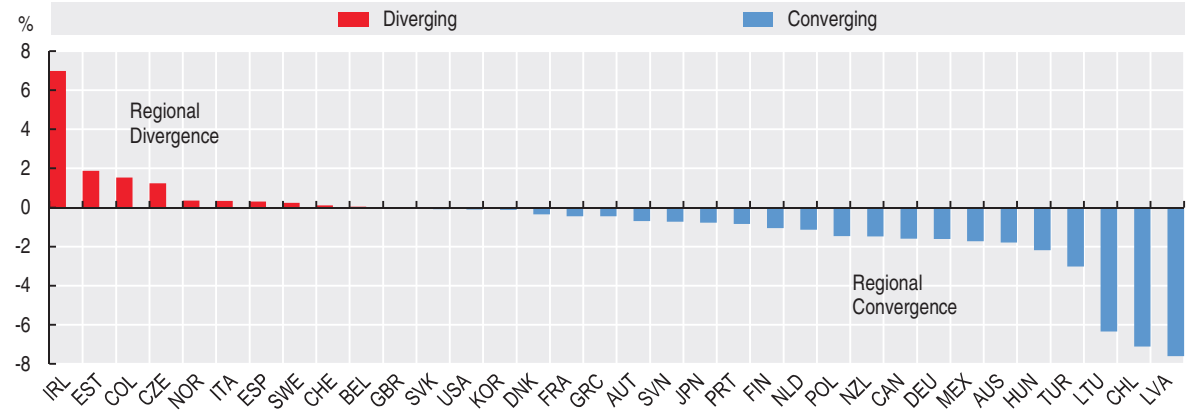
2016 or latest available year: Australia, Korea, Norway and Untied States, 2015; New Zealand and Turkey, 2014; Switzerland, 2013; Japan, 2012.

Figure notes

1.11: Computed for 23 EU countries with predominantly rural (388 regions, in which 155 are remote) and predominantly urban regions (368 regions).

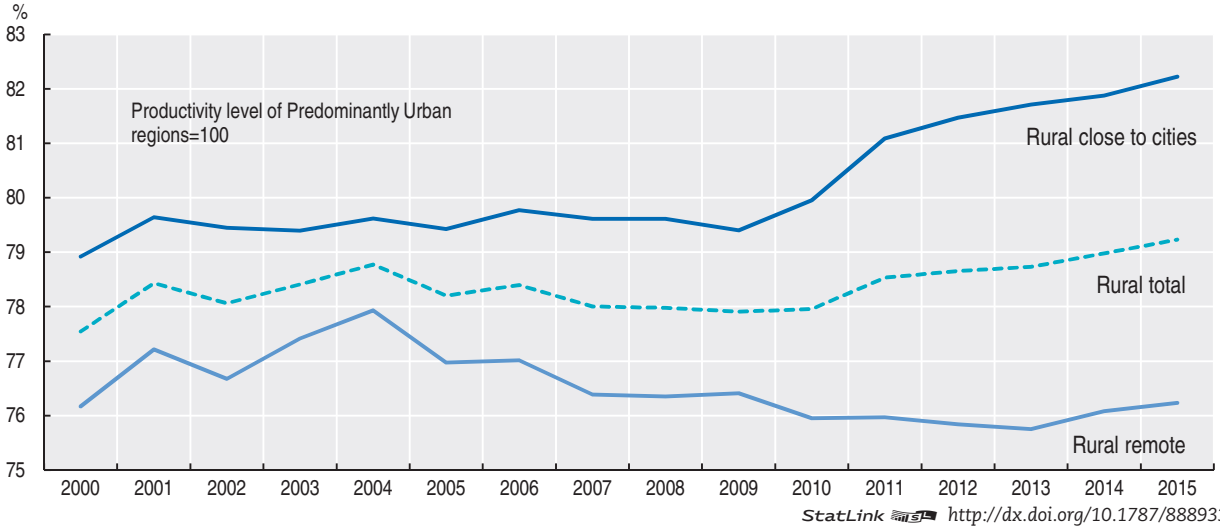
1.10. Productivity convergence, 2010-16 (TL2)

Difference in average annual productivity growth between top 10% and bottom 10% regions



StatLink http://dx.doi.org/10.1787/888933816535

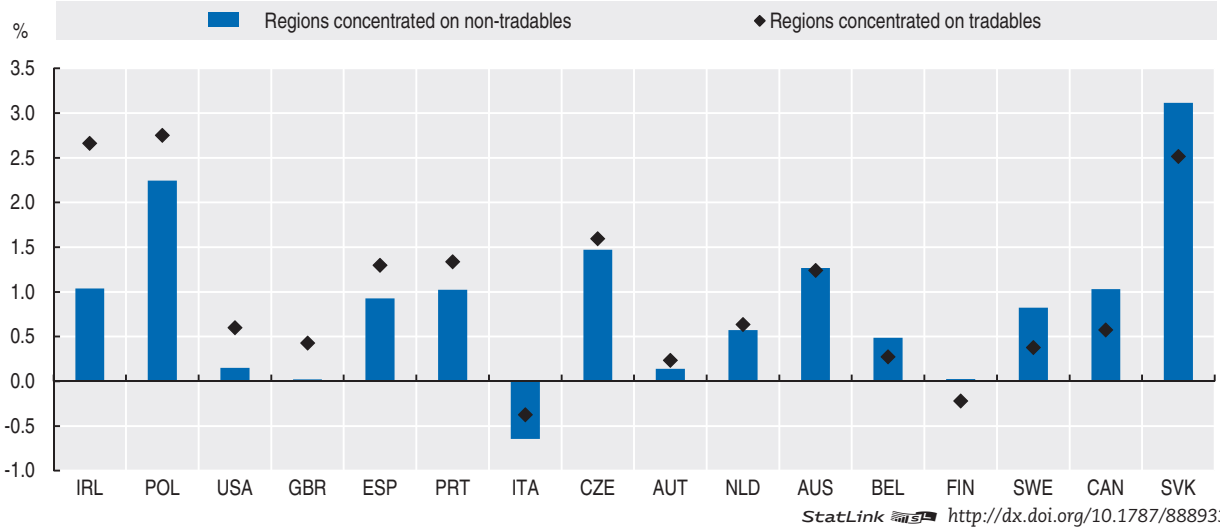
1.11. Productivity growth in rural regions, 2000-15 (TL3)



StatLink http://dx.doi.org/10.1787/888933816554

1.12. Annual productivity growth in tradable and non-tradable sectors, 2010-15 (TL2)

Productivity growth in regions that are more or less concentrated on tradable sectors than the national average



StatLink http://dx.doi.org/10.1787/888933816573

Spatial productivity differences within and across regions

In OECD countries, 60% of spatial disparities in productivity are found within the same large (TL2) region.

Productivity in OECD regions has a strong spatial dimension, i.e. it differs widely between neighbouring areas and depends on local factors. Even within the same large region (TL2), the most productive smaller area (TL3) is on average 56% more productive than the least productive one. Spatial differences in productivity within large (TL2) regions are particularly stark in the United Kingdom and Korea, which is partly due to very high productivity levels in the areas encompassing the capital city compared to surrounding areas (Figure 1.13).

In 14 of 22 OECD countries considered, productivity differences between TL3 regions are predominantly driven by contrasts in productivity within the same larger region. For example, spatial productivity disparities in Germany are larger between the Kreise (TL3) of the same Länder than across different Länder (TL2) of the country (Figure 1.14).

Definition

Theil index inequality in productivity (GDP per worker at place of work) across TL3 regions is decomposed in two components: a) inequality within TL2 large regions (across TL3 small regions inside TL2 regions) and b) inequality between TL2 regions. The Theil index measures total spatial disparities and it is the sum of the inequalities within and between TL2 regions.

The Frontier is the region leading its country in terms of labour productivity, measured by the real gross domestic product per employee. In some countries the leading region accounts for a small percentage of the total workforce. Where this is the case, the frontier is the weighted average of regions with the highest labour productivity levels accounting for 10% of the country's total employment.

Catching-up/diverging/keeping pace regions is a classification of regions based on their labour productivity growth relative to the frontier. It is based on the growth in labour productivity between 2000 and 2015 (or closest year available). Regions where labour productivity grew/dropped by at least 5 percentage points more/less than in the frontier are classified as catching-up/diverging regions, with regions that are keeping pace falling within the +/- 5 percentage points band.

Intraregional productivity differences account, on average, for 60% of total disparities in productivity across all TL3 regions in a country. Such disparities are most pronounced in the Slovak Republic, Finland, and Korea, where more than 80% of the total disparities among all TL3 regions is explained by differences within the same TL2 region. In the majority of countries, the proportion of spatial disparities in productivity within the same large region increased between 2000 and 2015. This rise was highest in Norway, with an increase of more than 61%.

The differences in productivity within TL2 regions are particularly marked between urban areas and remote rural areas. While the vast majority of a country's most productive regions (known as 'the frontier'), consist of regions with a predominantly urban population, remote regions are overrepresented in the group of diverging, or 'lagging' regions (Figure 1.15). In contrast, those regions that manage to catch up – i.e. regions that generate higher productivity growth than that of the national frontier – are mostly intermediate or rural regions that benefit from proximity to cities and their agglomeration economies. Remote regions only make up 14% of 'catching up' regions (i.e. those regions that successfully narrow the productivity gap versus the most productive regions in their country).

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex A for the methodology to define regional typology.

Reference years and territorial level

2000-15, TL3 and TL2.

Further information

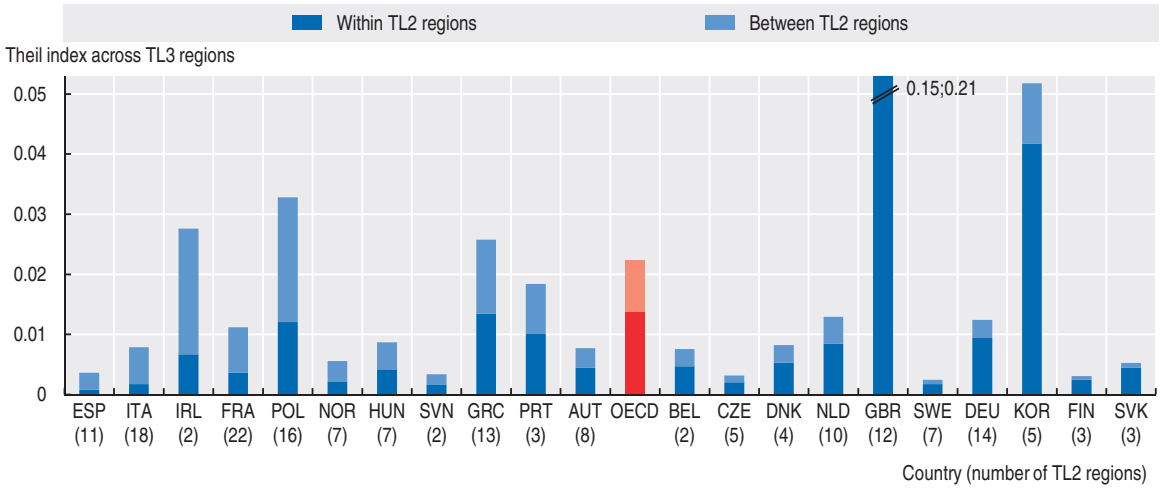
OECD (2016), *OECD Regional Outlook 2016: Productive Regions for Inclusive Societies*, OECD Publishing, Paris, *https://doi.org/10.1787/9789264260245-en*.

Figure notes

1.13-1.14: TL2 regions composed by only one TL3 region have been removed from the calculation. First year 2000, or first available year: Korea, 2008.

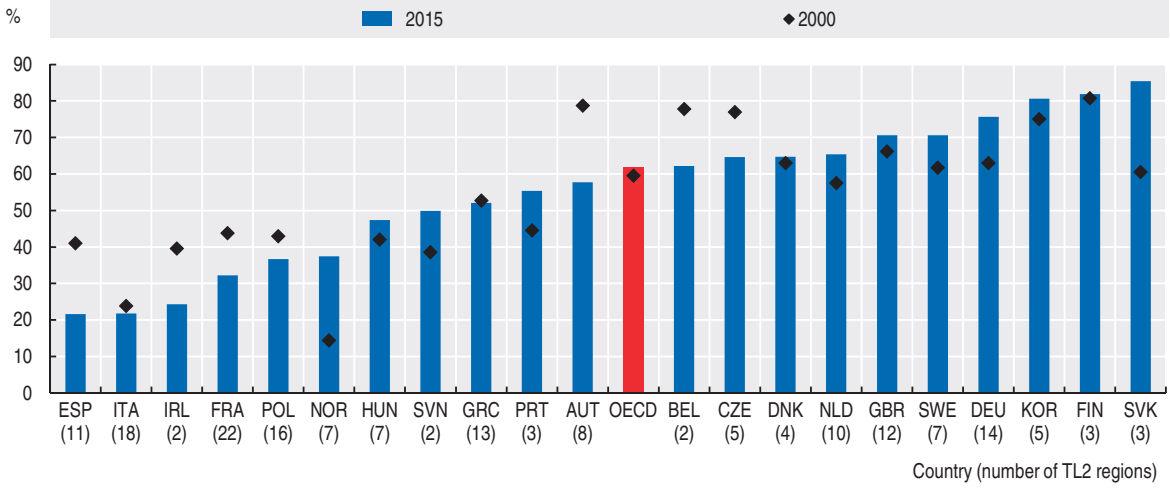
1.13. Composition of spatial disparities in productivity, 2015

Theil index of inequality, between and within large (TL2) regions.



StatLink http://dx.doi.org/10.1787/888933816592

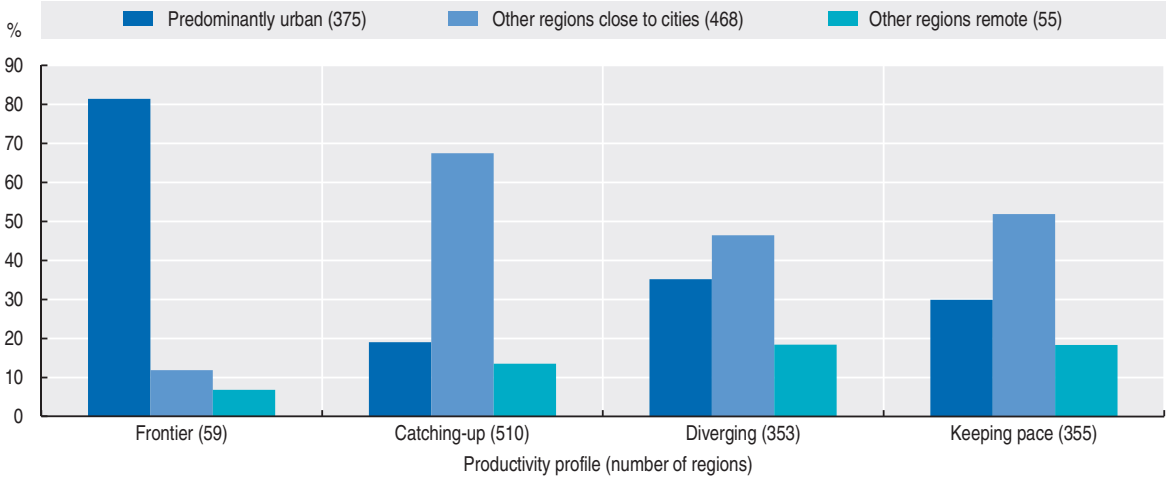
1.14. Spatial productivity differences within the same region, 2000-15



StatLink http://dx.doi.org/10.1787/888933816611

1.15. Patterns of productivity growth by type of region, TL3

Distribution of type of regions into frontier and regions catching up, diverging and keeping pace, 2000-15.



StatLink http://dx.doi.org/10.1787/888933816630

Innovation in regions: R&D and patents

Innovation within OECD countries is highly concentrated in a few regions, often capital city regions.

Research and development expenditure in 2015 ranged from 6% of GDP to negligible proportions of regional GDP. In Korea, Sweden, Austria, Denmark, and Germany, expenditure on R&D was particularly high, with an average outlay of around 3% of GDP or more (Figure 1.16). In those countries regional differences are also substantial. For instance, around 5% of GDP is spent on R&D in Styria (Austria) and Baden-Württemberg (Germany), which is approximately five times and three and a half times higher than in Burgenland or Saxony-Anhalt, respectively.

In almost all OECD countries, R&D expenditure – especially for private sector R&D (Figure 1.17) – is higher in capital regions than in the rest of the country. In Sweden, Korea, or Hungary, the contrast between the capital and the other regions of the country with respect to private sector R&D expenditure is particularly marked.

The strong spatial concentration of research and development resources is even more accentuated in terms of patent applications. At the top of the distribution, more than 500 patent applications per million inhabitants are filed annually in North Brabant (Netherlands), Southern-Kanto (Japan), Stockholm (Sweden) or Massachusetts (United States) (Figure 1.19 and Figure 1.20). In stark contrast, all regions in many Eastern or Southern European countries such as Greece, Turkey, Latvia, or Poland fall significantly below 100 patent applications per million inhabitants per year. The biggest interregional differences exist in the Netherlands and Japan, where the number of filed patent applications is 25 and 30 times higher in the most innovative region than in the least innovative region, respectively.

Throughout the OECD, considerable gender gaps in R&D employment persist (Figure 1.18). The gender gap in the R&D sector is 6 percentage points higher than the employment gender gap for all sectors in OECD regions. Even in countries and regions with relatively extensive R&D sectors, large gaps prevail. For example, the share of female R&D employees is 25 percentage points lower in Voralberg than in Vienna and around 20 percentage points lower in Drenthe than in Groningen. Only Latvia and Lithuania have higher female than male R&D employment.

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

TL2 regions and year 2015 in 1.16 to 1.20.

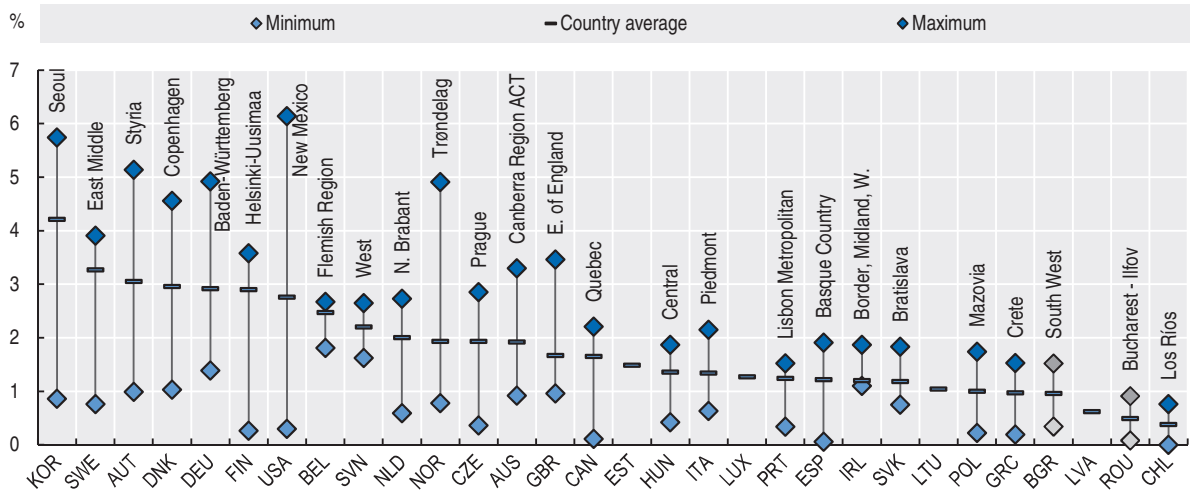
Figure notes

1.16: 2015; Australia and United States, 2014.

1.18: 2015; Norway, 2014.

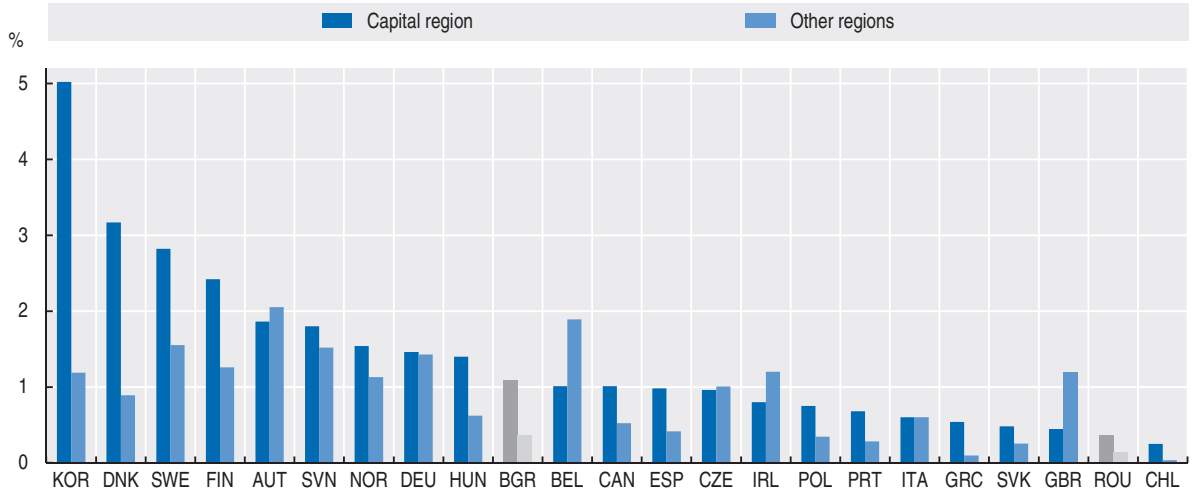
1.16. Expenditure on R&D in regions (TL2)

R&D expenditures as % of GDP



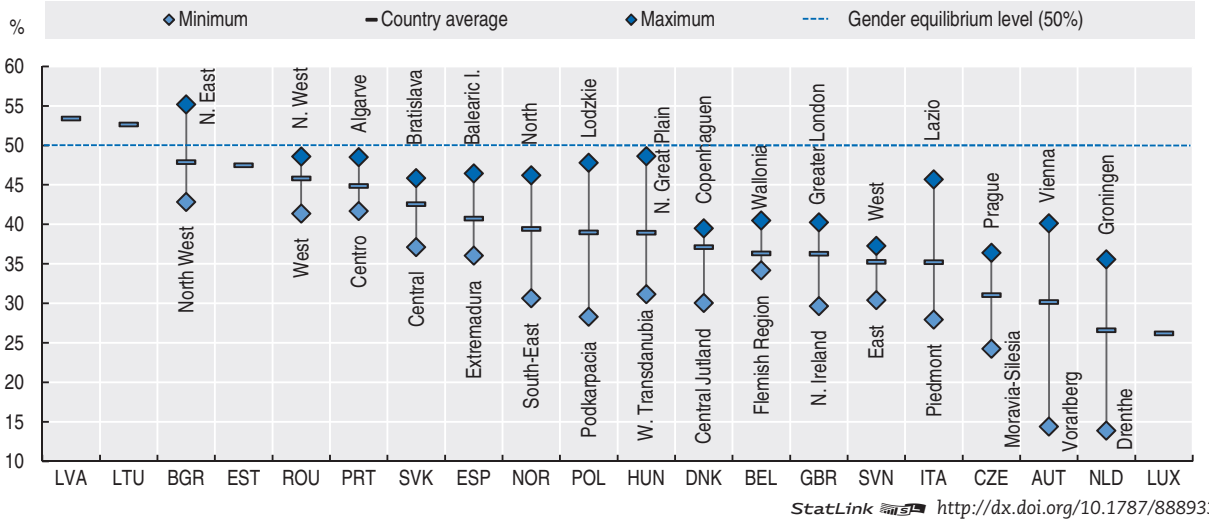
StatLink http://dx.doi.org/10.1787/888933816649

1.17. R&D expenditure as a % of GDP in capital regions



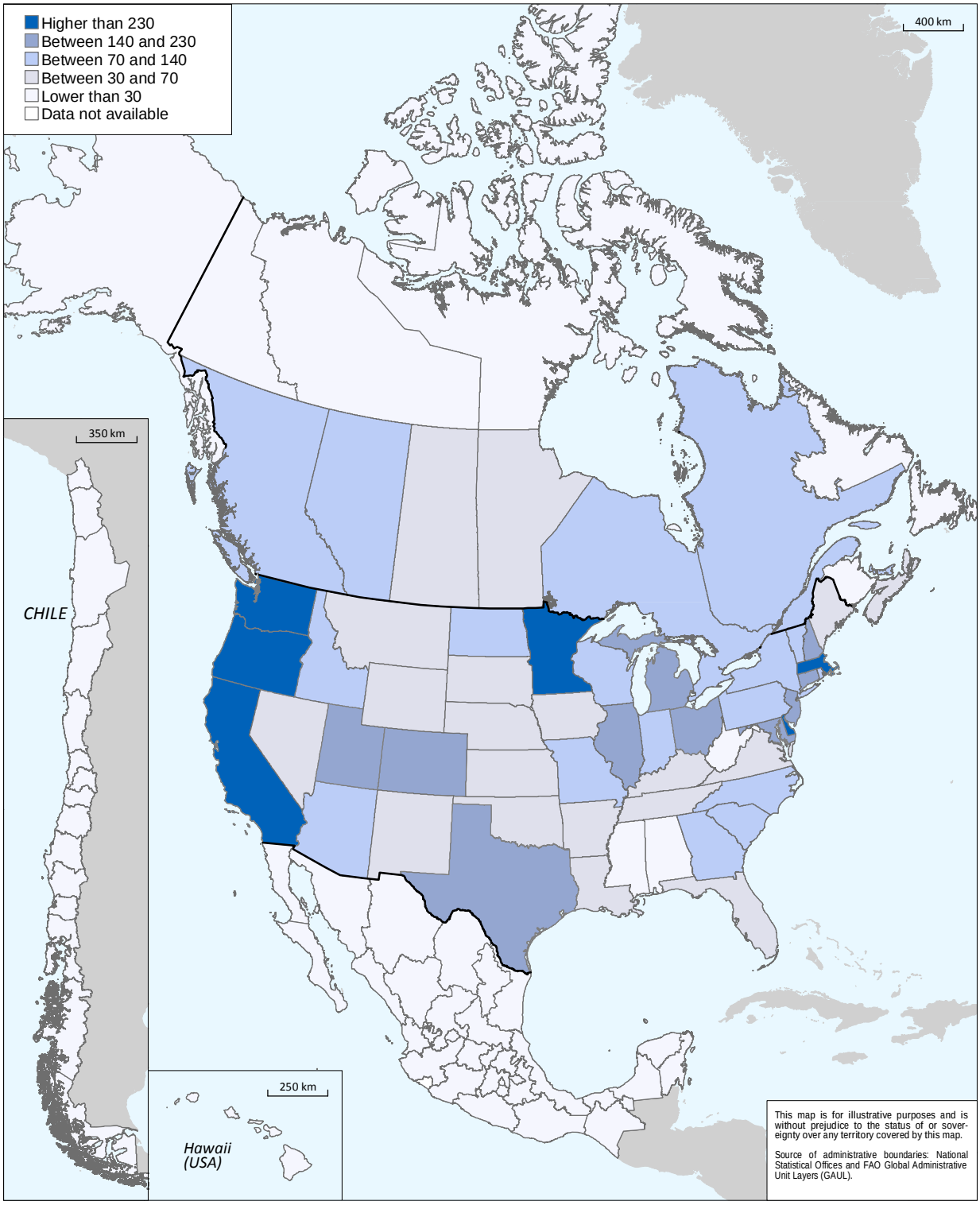
StatLink http://dx.doi.org/10.1787/888933816668

1.18. Regional differences in the % of women in R&D employment, 2015 (TL2)



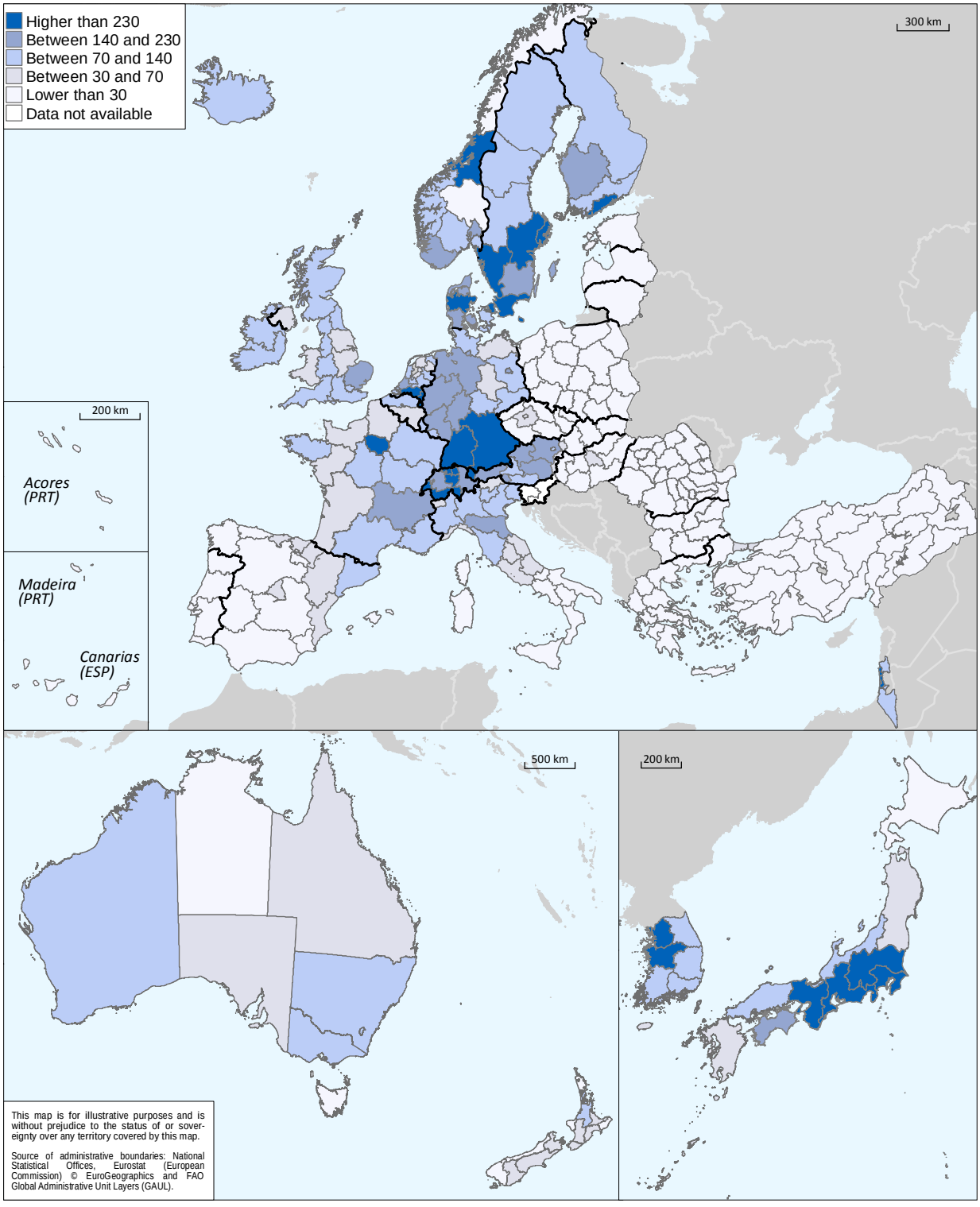
StatLink http://dx.doi.org/10.1787/888933816687

1.19. Patents per million inhabitants: North America and Chile, 2015 (TL2)



StatLink http://dx.doi.org/10.1787/888933816706

1.20. Patents per million inhabitants: Europe, Asia and Oceania, 2015 (TL2)



StatLink http://dx.doi.org/10.1787/888933816725

Entrepreneurship in regions

On average, 11% of firms in OECD regions were created within the previous 12-month period, with regional differences in a country of up to 13 percentage points.

Creations of new firms and closures of existing, but unsuccessful, firms are quintessential components of a functioning economy. New firms generate employment, spur competition and foster innovation, and the replacement of old unprofitable firms typically contributes to a more efficient allocation of resources within regional economies.

Each year the business environment in the OECD area is characterised by considerable changes as new firms replace old ones. In 2015, almost 10.8 % of firms with at least one employee in OECD regions consisted of newly created firms. At the same time, around 9.4% of existing firms with employment were closed in 2015. The net creation rate of firms, the difference between creation and closure rates, was 1.4%, which was 2 percentage points higher than in 2014. Across OECD countries, regional firm creations differ significantly. While the average regional firm creation rate was below 5% in Belgium and Norway, in several Eastern European countries, such as the Czech Republic, Estonia or Hungary, the regional average surpassed 10% (Figure 1.21). Similarly, average regional net firm creation rates range from more than 4% in the United Kingdom to -2.7% in the Slovak Republic.

Most countries have large spatial differences in the rates of firm creations and firm closures. In five countries – Austria, Spain, France, the United Kingdom, and Italy – the interregional range is particularly large (Figure 1.23). In each case, the most dynamic region records a firm creation rate that is over double that of the firm creation rate in the least dynamic region (Figure 1.21). Overall, the United Kingdom, Italy and France display the largest regional disparities. Firm closure rates also vary widely within countries. For example, Seine-Saint-Denis in France recorded a firm closure rate of more than 15%, the highest regional rate in the OECD (Figure 1.22). In contrast, only around 8% of firms were closed in Haute-Marne, France, resulting in an interregional gap of more than 7 percentage points. With regard to net firm creation rates, regional differences are largest in Denmark, Portugal, and Italy, where net creations differ up to 6 percentage points.

Firm creations and firm closures are closely linked. Regions with higher share of new firms also experience relatively more firm closures. With regards to both firm closures and firm creations, capital regions are often particularly dynamic. Capitals such as Vienna (Austria), Brussels (Belgium), Copenhagen (Denmark), or Lisbon (Portugal) are the regions with the highest business churn in their respective countries.

Definition

Enterprise birth: Creation of a combination of production factors with the restriction that no other enterprise is involved in the event. Excludes entries in the business population due to reactivations, mergers, break-ups, split-offs and restructuring. Firm birth rate is the ratio of new firms to active firms

Enterprise death: Dissolution of a combination of production factors with the restriction that no other enterprises are involved in the event. Excludes exits from the population due to mergers, take-overs, break-ups and restructuring of a set of enterprises. Firm death rate is the number of firm deaths relative to active firms.

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

OECD (2017), *The Geography of Firm Dynamics: Measuring Business Demography for Regional Development*, OECD Publishing, Paris. *http://dx.doi.org/10.1787/9789264286764-en*.

Reference years and territorial level

2015 or latest available year.

TL2 regions in Australia, Canada, Belgium, Israel, Mexico, the Netherlands, the United States. TL3 regions in all other countries.

Further information

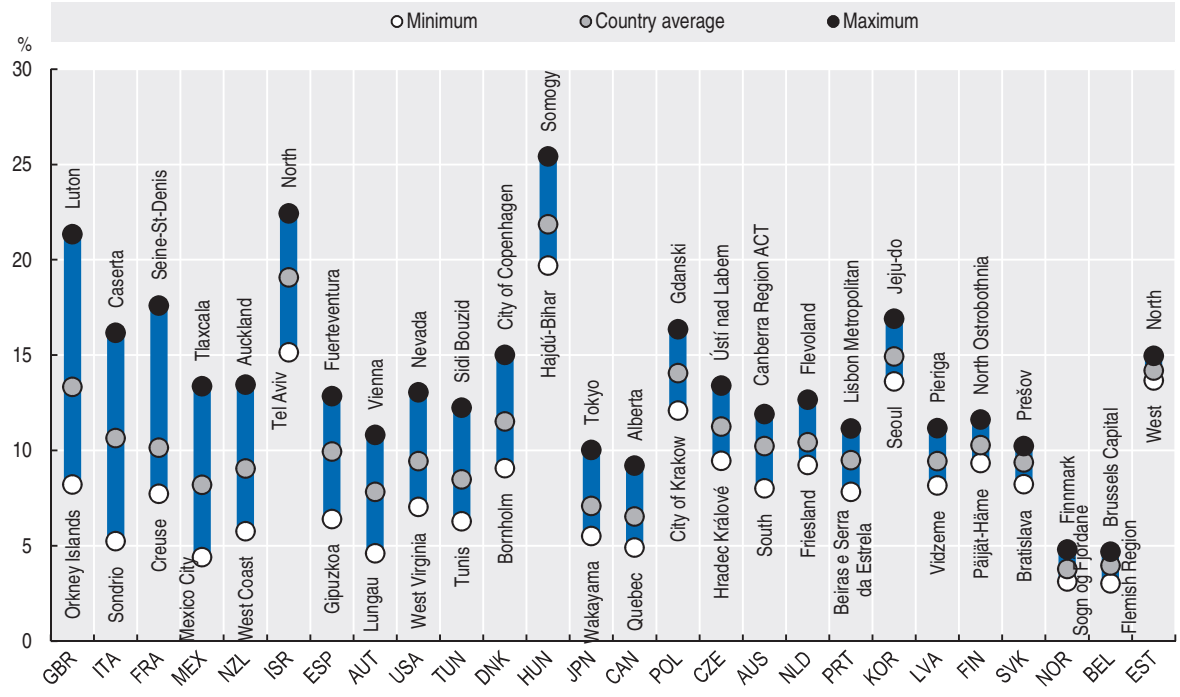
OECD/Eurostat (2007), *Eurostat-OECD Manual on Business Demography Statistics*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264041882-en*.

Ahmad, N. (2008), "*A proposed framework for business demography statistics*", in Measuring Entrepreneurship, Springer US, pp. 113-174.

Figure notes

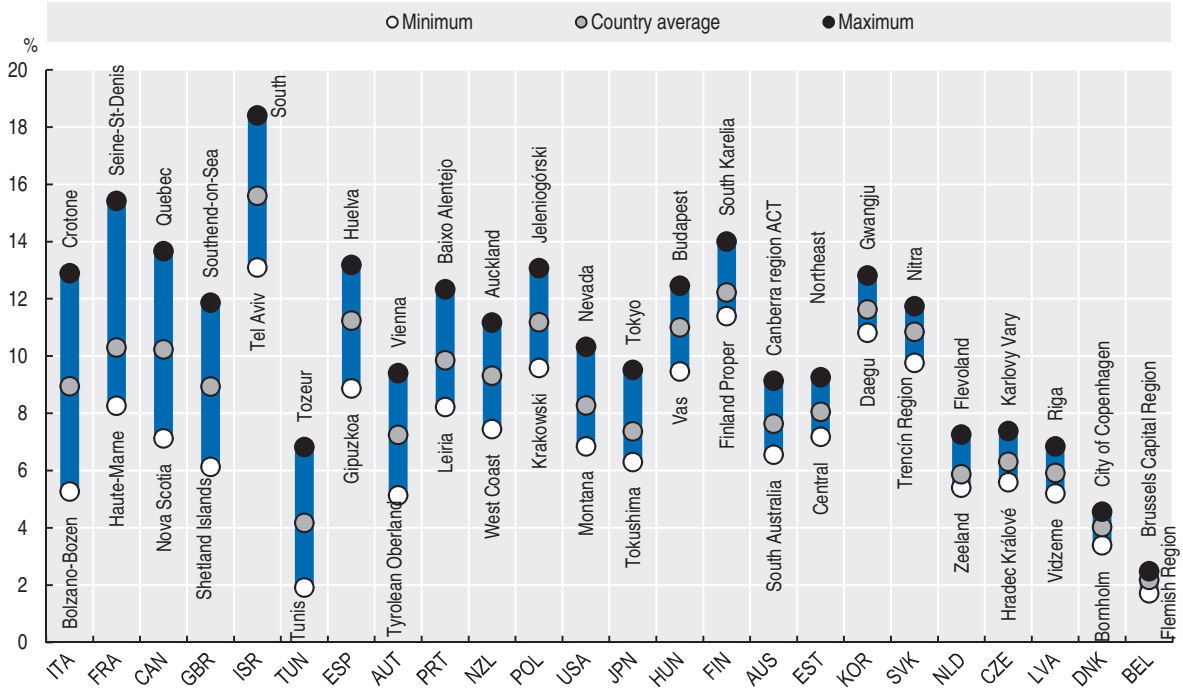
1.21-1.24: 2016 or latest available year: New Zealand and Norway, 2016; Estonia, Israel, Japan, Latvia, Mexico and United States, 2014; Denmark, 2013; Poland, 2010. TL3 regions, except TL2 regions in Australia, Belgium, Israel, Mexico, Netherlands, and United States. Statistics are based on employer firms where such data are available. In Israel, Korea, Netherlands, Poland, and Tunisia all firms including non-employer firms are considered. In Japan, Mexico, New Zealand, and United States, statistics are derived from establishment data. Statistics are calculated for ISIC Rev. 4 sectors B to S. For Australia statistics are calculated for sectors A to S, additionally including agriculture as no separate data are available for sectors B to S.

1.21. Regional variation in firm creation rates, 2015



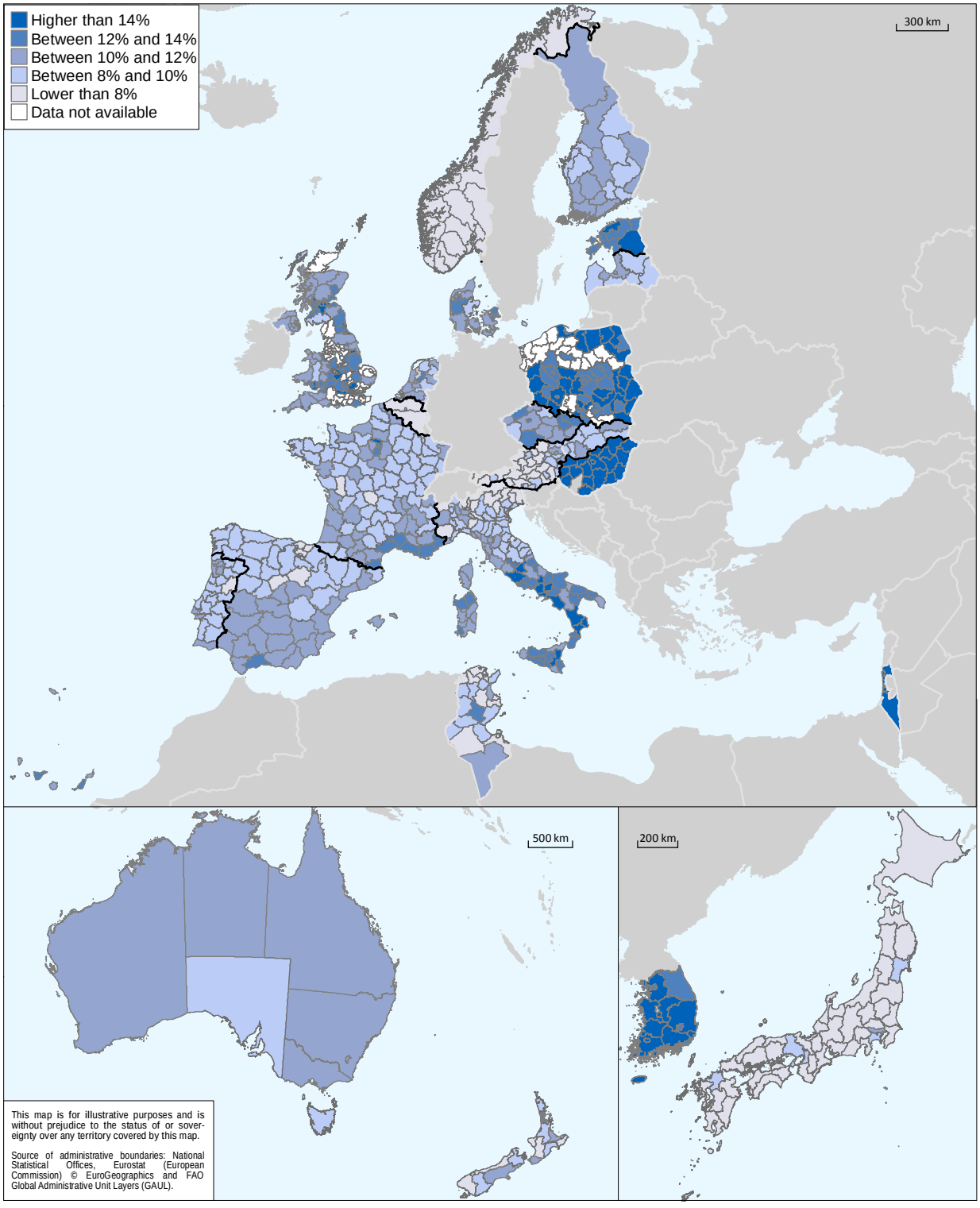
StatLink http://dx.doi.org/10.1787/888933816744

1.22. Regional variation in firm closure rates, 2015



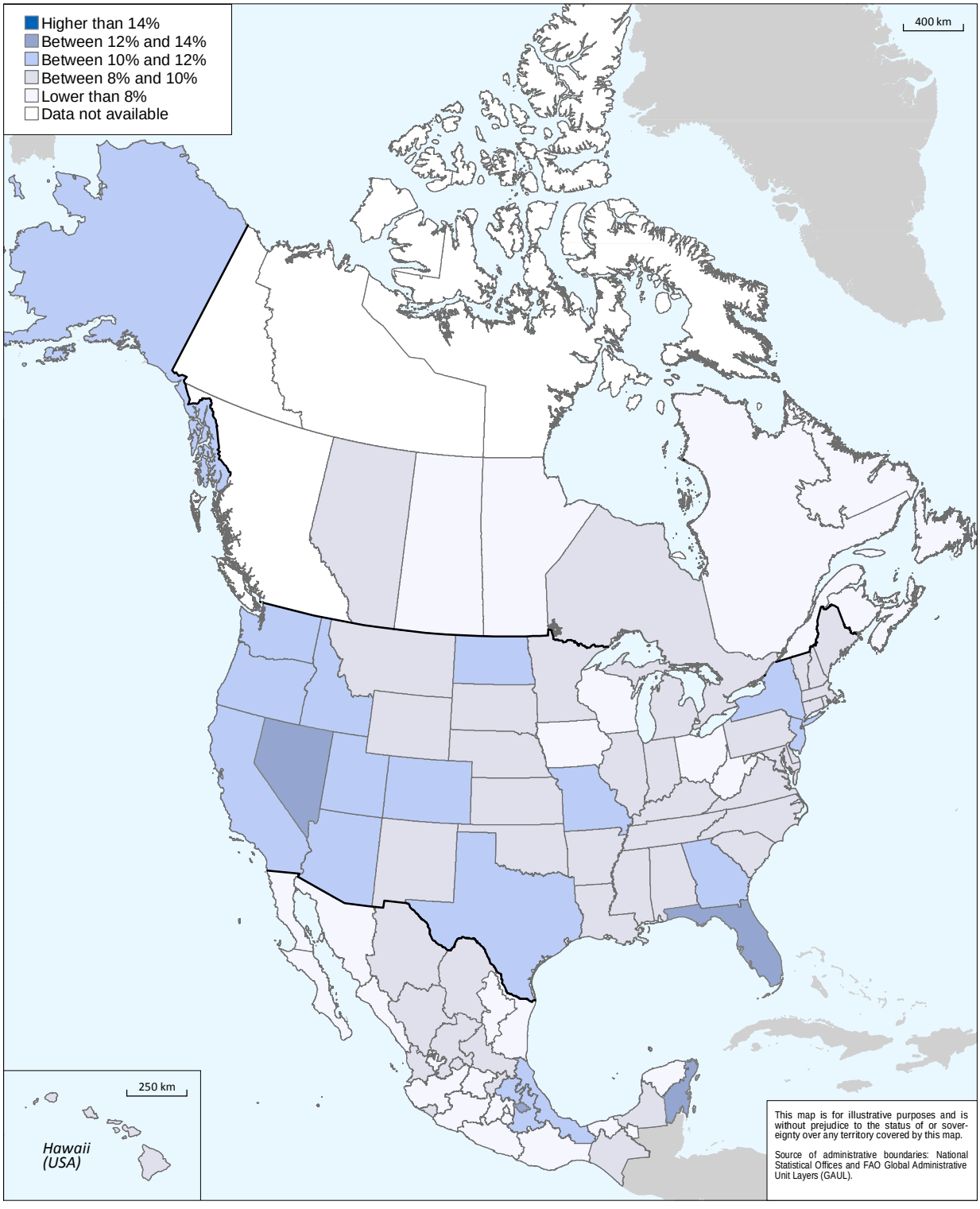
StatLink http://dx.doi.org/10.1787/888933816763

1.23. Firm creation rates in Europe, Asia, Australia, and Tunisia, 2015



StatLink http://dx.doi.org/10.1787/888933816782

1.24. Firm creation rates in North America, 2015



StatLink http://dx.doi.org/10.1787/888933816801

Rural-urban differences in firm creations

Urban regions have higher rates of firm creation than rural regions.

The urban-rural divide in economic activity is at the core of regional differences in firm creations in OECD countries. On average, in 2015, 51% of new firms were created in predominantly urban regions, 36 % in intermediate regions and 13% in predominantly rural regions. The larger shares of new firms in intermediate and predominantly urban regions are partly explained by their larger proportion of all firms. However, firm creation rates are also highest in predominantly urban regions when controlling for the relative size of the respective firm populations. This pattern is fairly universal and was observed in 12 out of the 14 countries studied (Figure 1.25). The two exceptions were Hungary and Slovakia, where firm creation rates were higher in predominantly rural regions. In most countries, intermediate regions record firm creations that fall between the rates observed in predominantly urban and predominantly rural regions.

Net firm creation rates, i.e. the difference between firm creation and closure rates, also tended to be highest in predominantly urban regions (Figure 1.26). On average, net firm creation in predominantly urban regions was equivalent to 1.5% of the entire firm population. For intermediate and predominantly rural regions, net firm creations constituted around 1% and 0.8% of the firm population, respectively.

The differences in firm dynamics between rural, urban and intermediate regions are reflected in the sectoral composition of new firms. Around 60% of new businesses in the financial sector as well as in information and communication are created in urban regions (Figure 1.27). About 40% of new firms in intermediate regions are created in industry (including manufacturing) and in construction, sectors that have high physical space requirements and benefit from easy access to large markets as well as transportation networks. In rural regions, on the other end of the spectrum, the hospitality sector accounts for a relatively large share (up to 20%) of new firm creations, reflecting the vitality of tourism in rural areas. In general, firm creation rates are higher in the service sector than in the rest of the economy. The service sector is overrepresented in urban areas, which at least partially explains differences in firm dynamics between rural, urban, and intermediate regions.

Definition

Enterprise: Smallest combination of legal units producing goods and services that benefit from a certain degree of autonomy in decision making.

Enterprise birth: Creation of a combination of production factors with the restriction that no other enterprise is involved in the event. Excludes entries in the business population due to reactivations, mergers, break-ups, split-offs and restructuring. Firm birth rate is the ratio of new firms to active firms

Enterprise death: Dissolution of a combination of production factors with the restriction that no other enterprises are involved in the event. Excludes exits from the population due to mergers, take-overs, break-ups and restructuring of a set of enterprises. Firm death rate is the number of firm deaths relative to active firms.

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

2015 or latest available year. TL3 regions.

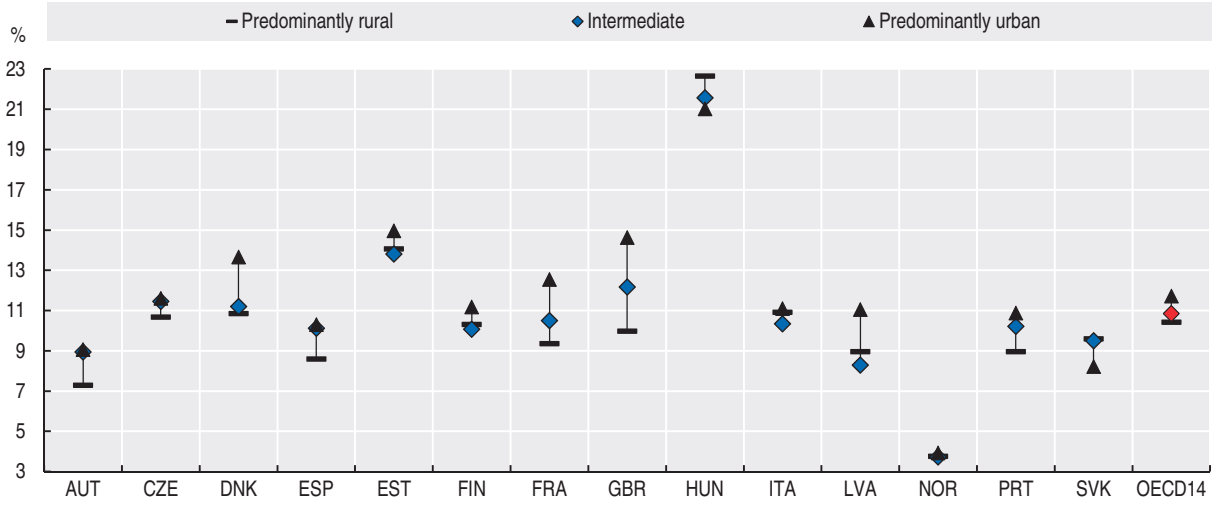
Further information

OECD (2017), *The Geography of Firm Dynamics: Measuring Business Demography for Regional Development*, OECD Publishing, Paris. *http://dx.doi.org/10.1787/9789264286764-en*.

Figure notes

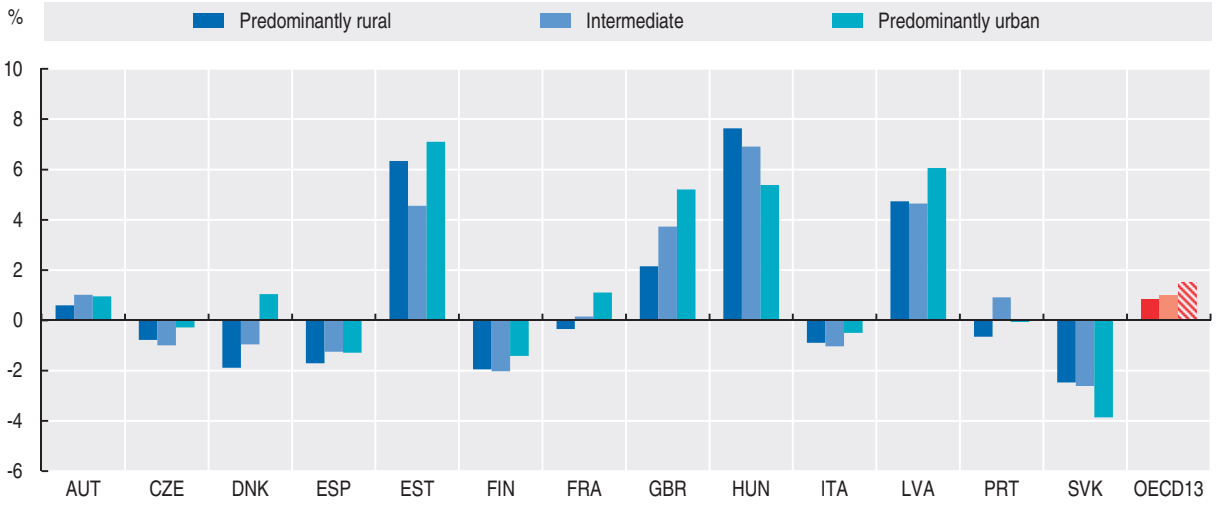
1.25-1.27: Firm creation and firm closure rates are calculated for firms with employees (employer firms) and ISIC Rev. 4 sectors B to S. Countries included are Austria, Czech Republic, Denmark, Estonia, Finland, France, Hungary, Israel, Italy, Korea, Latvia, Norway, Spain, Poland, Portugal, Slovak Republic, Switzerland, and United Kingdom. Statistics are based on employer firms where such data are available. In Korea and Poland, all firms including non-employer firms are considered.

1.25. Firm creation rates by country and type of region, 2015



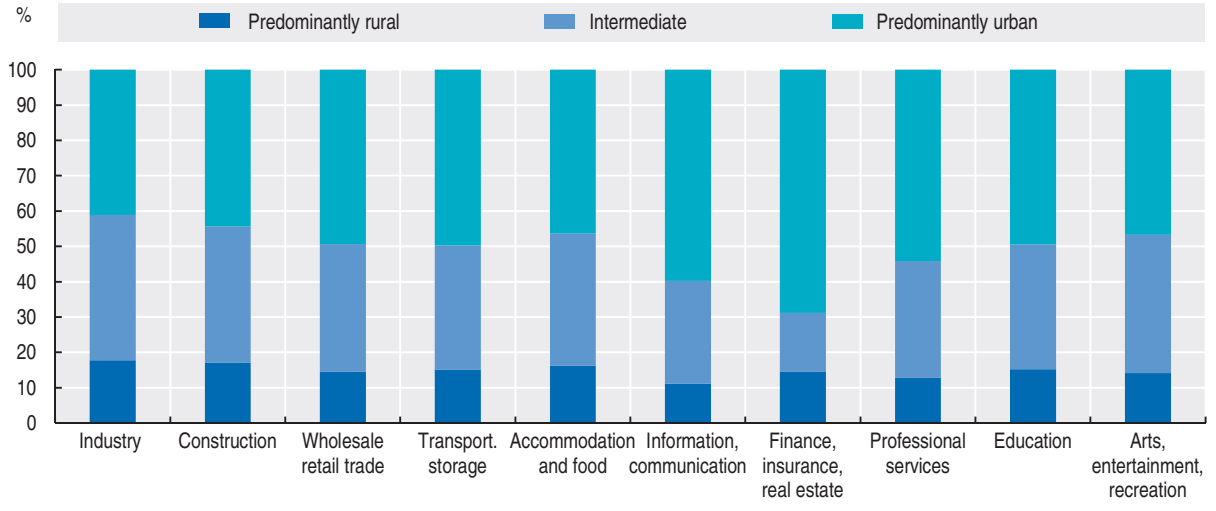
StatLink http://dx.doi.org/10.1787/888933816820

1.26. Firm net creation rate by type of region, 2015



StatLink http://dx.doi.org/10.1787/888933816839

1.27. Firm creations by sector and type of region, 2015



StatLink http://dx.doi.org/10.1787/888933816858

Capital regions as drivers of economic activity and firm creations

Capital regions are centres of entrepreneurship: firm creation as well as the number of jobs created and destroyed each year is 60% higher than elsewhere.

Capital regions are hubs of economic growth and innovation. In 2015, capital regions accounted for 20% of the national population but hosted 27.5% of all firms in their respective countries. The extraordinary importance of capital regions is also demonstrated by the economic influence they exert. In almost all OECD countries considered, employment controlled by firms in capital regions greatly exceeds the number of jobs located in those regions (Figure 1.28) (see Box on definition below). This gap is particularly large in Finland and France, where the national share of jobs controlled by firms with headquarters in Helsinki-Uusimaa and Ile-de-France is more than 10 percentage points higher than the national share of jobs that are located there.

Capitals also account for disproportionately large shares of new firms in OECD countries. 29.5% of new firms are created in capital regions surpassing their share of existing firms by 2 percentage points. The dynamism of capital regions' business environments is demonstrated when comparing their firm creation rates with the average regional firm creation rate in the rest of the country (Figure 1.29). In 13 out of the 15 countries in this study, the creation rate of new employer firms is larger in the capital than in the rest of the country. In France, Italy, and United Kingdom this difference is most visible. On average, Ile-de-France, Lazio, and Greater London record firm creation rates that are, respectively, 3.1, 4.8, and 5.7 percentage points higher than in other regions of their country. The greater dynamism of capital city regions is also reflected in the net creation rate of firms, which are 0.8 percentage points (or almost 65%) higher than in other regions of the same country.

The firm environment in capital regions is also more dynamic when compared with their populations. On average, capital regions recorded 4.5 newly founded firms per 1000 inhabitants compared to 2.8 new firms per 1,000 inhabitants in non-capital regions (Figure 1.30). In the Czech Republic and the United Kingdom, the density of new firms per capita is even twice as high in the capital region versus the rest of the country. Switzerland is the only country where the density of new firms is lower in the capital than in the average non-capital region. As most urban areas, capital city regions have a larger service sector than non-urban areas, which tends to be more dynamic in terms of firm creations.

Definition – control of economic activity

Employment share of regions: the proportion of all employment nationally that is physically located in the region. Employment located in capital regions is based on establishment data that provide precise information on the place of employment of employees.

Share of employment controlled by local firms: the proportion of all employment nationally that belongs to a firm with its corporate headquarter in the region. The information is derived from enterprise level data that specify the headquarter location of firms and the accompanying level of employment by each firm.

Source

OECD (2017), *The Geography of Firm Dynamics: Measuring Business Demography for Regional Development*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264286764-en*.

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

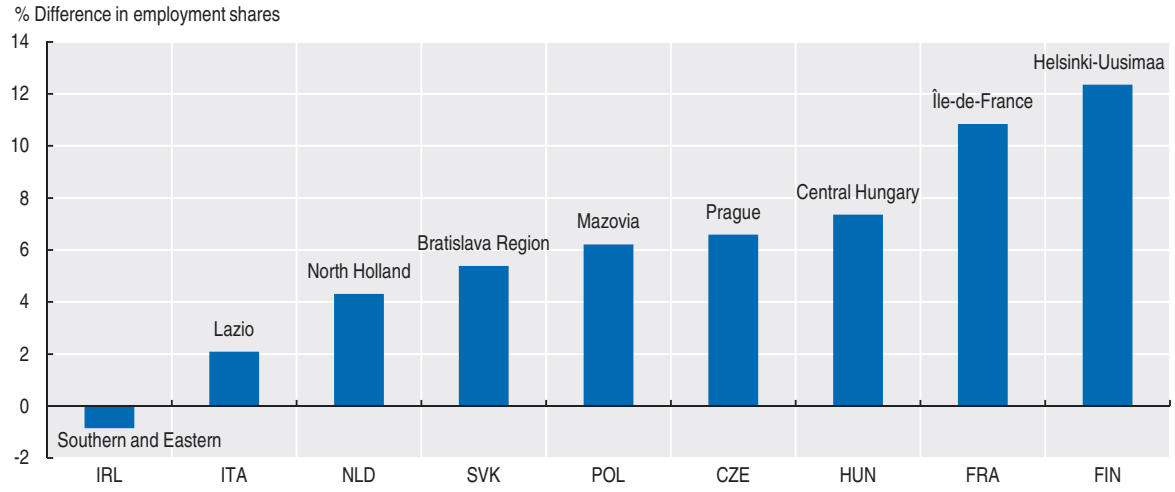
Reference years and territorial level

TL2 regions in 2014 (1.27) and 2015 (1.28; 1.29).

Figure notes

1.29-1.30: TL2 regions in 2015. Last available year: Spain and Switzerland, 2014; Denmark, 2013; Netherlands 2010. Only employer firms considered.

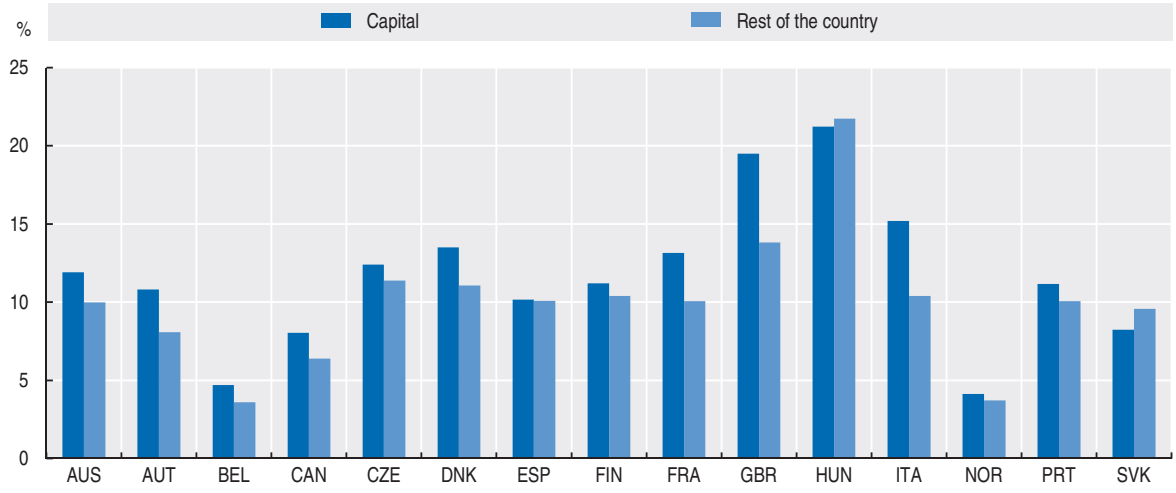
1.28. Difference between employment controlled by and located in capital regions, 2014



StatLink http://dx.doi.org/10.1787/888933816877

1.29. Firm creation rates in capital regions

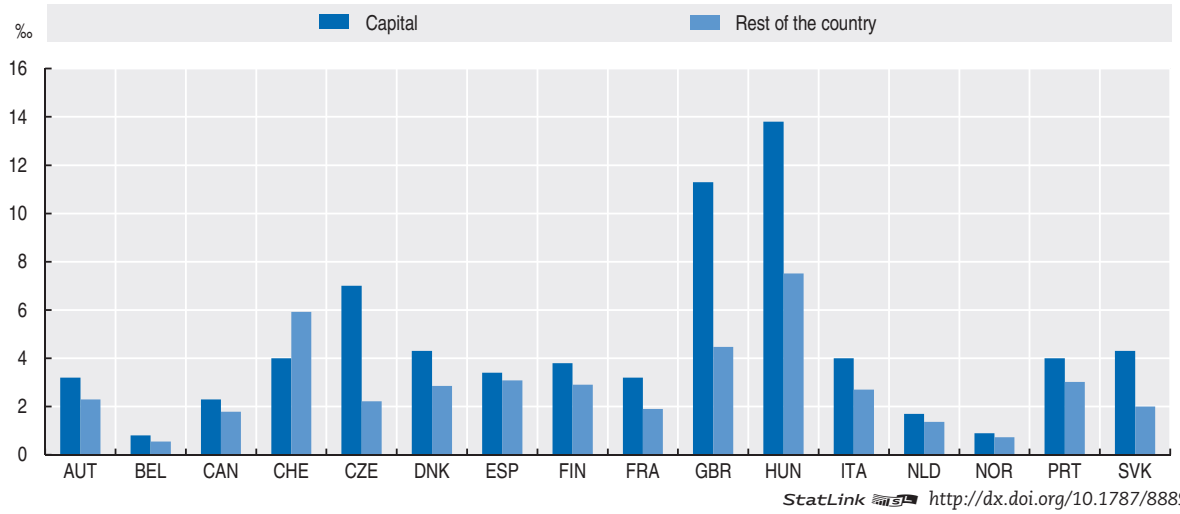
TL2 regions, 2015



StatLink http://dx.doi.org/10.1787/888933816896

1.30. Firm creations per capita in capitals compared to other regions, 2015

Firm creations per 1000 inhabitants in TL2 regions



StatLink http://dx.doi.org/10.1787/888933816915

New firms' employment creation in regions

Jobs created by new firms accounted for 3.4% of employment in 2015, an increase of 17% relative to the previous year. Job creation from new firms can differ up to 5 percentage points across regions in a country.

An essential contribution of new firms to economies is manifested through the number of jobs they create. New firms can affect employment in two ways. They provide jobs and thus directly contribute to regional employment. Additionally, new firms also have an effect on employment through indirect channels by influencing employment in firms that already exist.

In 2015, new firms (i.e. those firms created in the previous 12-month period) directly employed, on average, 3.4% of all employees in OECD regions. Employment creation by new firms increased by 17% compared to 2014. Regional differences in employment creation by new firms, measured by the range between the region with the highest and the lowest proportion of employees in new firms, were especially high in Southern Europe (Figure 1.31). In Italy, Spain, Poland, Portugal, and France (the countries with the highest regional discrepancies) the top-performing region benefitted from employment creation by new firms that was many times larger than in the bottom region. As a consequence, regional differences within countries can be significant. For instance, in Italy, job creation by new firms amounted to 1.4% of overall existing jobs in Pordenone compared to 6.6% in Isernia.

Regional differences in new firms' employment creation are related to the sectoral composition of regional economies. Regions that were more concentrated on tradable sectors recorded higher average net employment creation by the replacement of old with new firms over the past three years than regions with stronger focus on non-tradable sectors (Figure 1.32).

Not all new firms create jobs. While firms that do not have any employees – so-called non-employer firms – may eventually grow and start employing, they initially do not contribute to regional employment and may only emerge due to tax incentives that differ across countries. The creation of employer firms is slightly higher in rural regions, where they make up almost 47% of all new firms, than in urban regions (Figure 1.33). The relative importance of non-employer firms for regional firm creation differs starkly across countries. In United Kingdom, Finland, or Estonia a large majority of new firms are employer firms, whereas Norway and Latvia primarily record creations of non-employer firms.

Definition of employment

Employees: Persons who work for a firm receiving compensation in the form of wages, salaries, fees, gratuities, piecework pay or remuneration in-kind. Employees are also included in the number of persons employed.

Employment creation rate: The ratio of employees in new firms versus employees in all firms.

Employer enterprise: An enterprise having a positive number of employees in any part of the year.

Non-employer enterprise: An enterprise having no employees in any part of the year. The enterprise can have a positive number of persons employed (working proprietors, partners working regularly).

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

1.31-1.33: TL3 regions in 2015.

Further information

OECD (2017), *The Geography of Firm Dynamics: Measuring Business Demography for Regional Development*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264286764-en*.

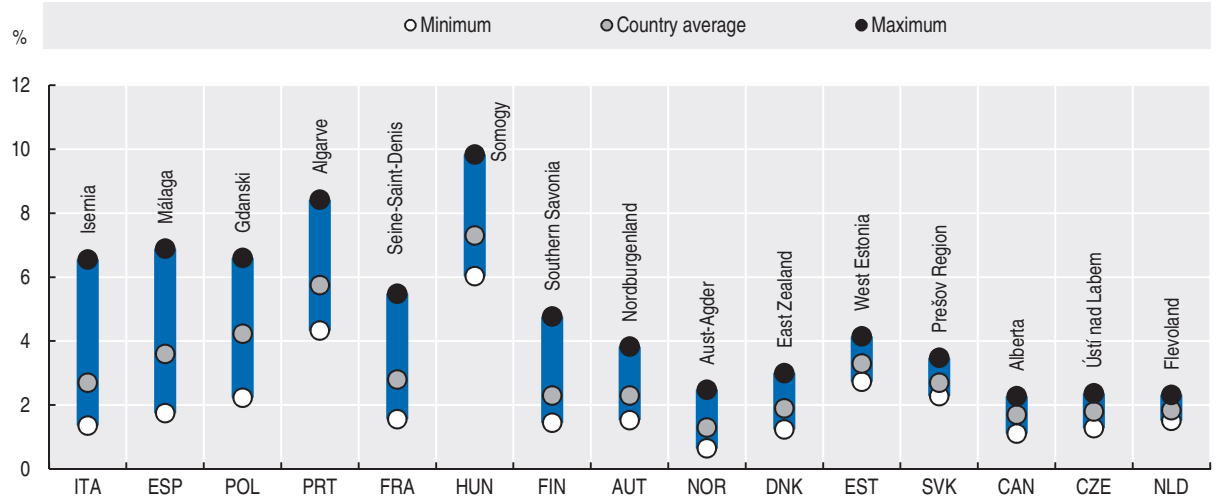
Figure notes

1.31: Last available years: Denmark and Spain, 2013; Portugal 2016. TL2 regions in Canada and the Netherlands.

1.32: Last available years: Denmark, Portugal, and Spain, 2013. TL2 regions in Canada and the Netherlands.

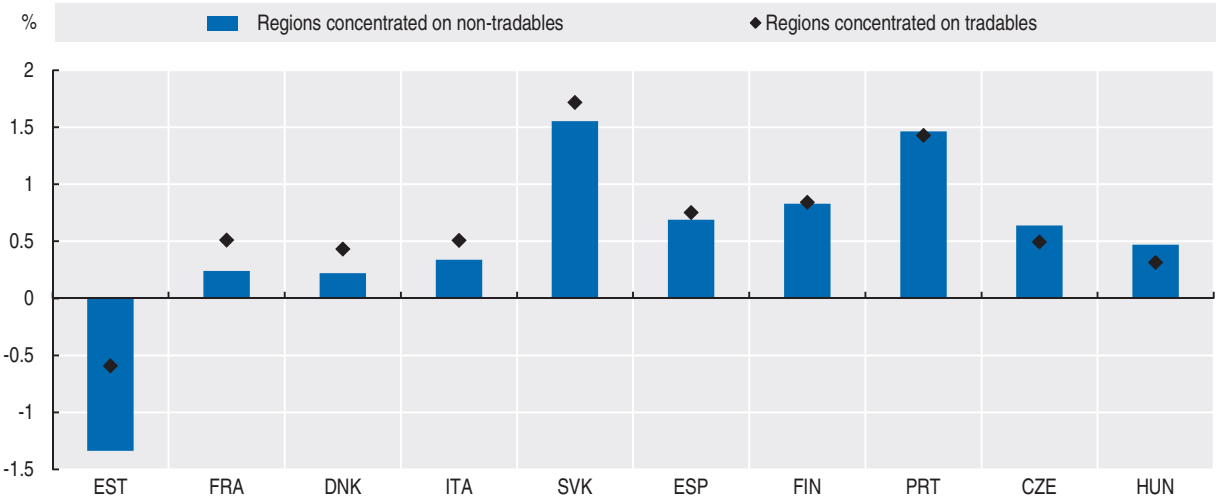
1.33: 2015 or latest available year: 2010 Estonia; 2013 Denmark; 2014 Latvia and Spain.

1.31. Employment creation by new firms, 2015



StatLink http://dx.doi.org/10.1787/888933816934

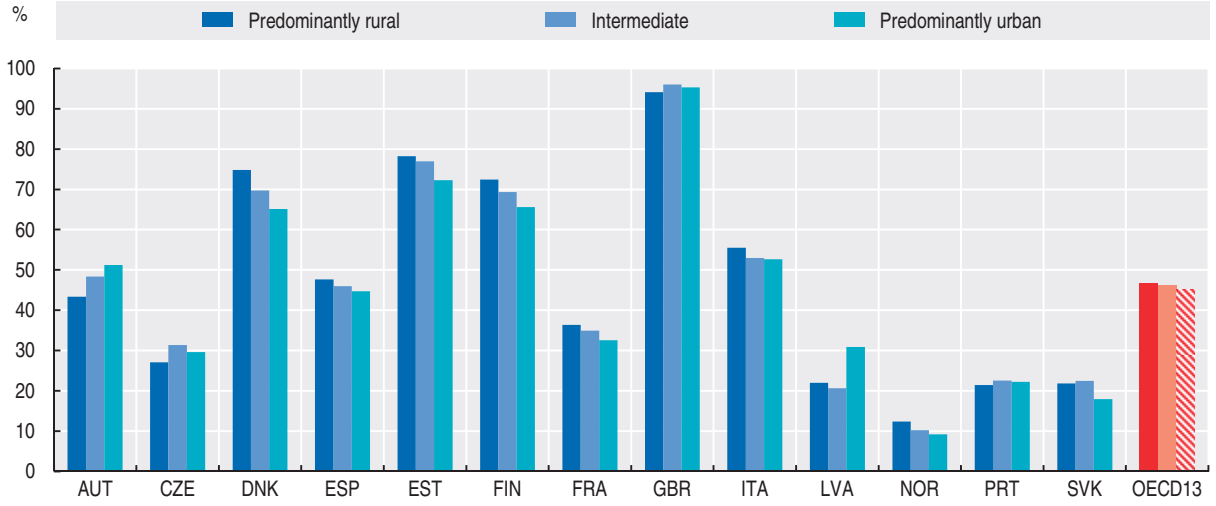
1.32. Net employment creation by new firms, tradable vs. non-tradable sectors



StatLink http://dx.doi.org/10.1787/888933816953

1.33. The relative importance of employer firms by type of region, 2015

Share of employer firms among all newly created firms



StatLink http://dx.doi.org/10.1787/888933816972





2. WELL-BEING IN REGIONS

Education

Access to services

Household income

Housing conditions

Jobs

Health status

Safety

Civic engagement and governance

Environment

The data in this chapter refer to regions in OECD and selected non-OECD countries. Regions are classified on two territorial levels reflecting the administrative organisation of countries. Large (TL2) regions represent the first administrative tier of subnational government. Small (TL3) regions are contained in a TL2 region.

Education

Over the last 15 years, within-country differences in educational attainment have decreased due to an improvement in the most lagging regions.

Human capital is an essential driver of both social and economic well-being. Education equips individuals with the tools to adapt to technological change and to the rapidly evolving needs of the labour market. Beyond the acquisition of knowledge and competences, education fosters socialisation and social integration.

Around 79% of the adult population in OECD regions had at least upper secondary education in 2017, with large educational differences across regions. In six OECD countries, the difference between the regions with the highest and lowest value in the share of the workforce with at least upper secondary education is even above 20 percentage points (9; Australia and Slovenia 2010 Figure 2.1). In Ankara (Turkey) and the Basque Country (Spain), this share is over 28 percentage points higher than in Eastern Anatolia - East (Turkey) and Extremadura (Spain), respectively. Among non-OECD countries, Colombia, South Africa, Romania and Tunisia also show large spatial variation in the proportion of people who have completed at least upper secondary education. The average educational attainment rate of the adult population is often highest in capital regions.

Within countries, regional differences in the educational attainment of the workforce have changed remarkably since 2000 (Figure 2.2). In most OECD countries, regional gaps have decreased, due to improvements in regions whose workforce has a relatively low education level compared with other areas. France, Canada and Greece have experienced the largest decreases in these spatial gaps, which amount to a reduction in regional disparities of 15.8, 8.5 and 7.8 percentage points, respectively. In contrast, several countries have experienced an increase in regional differences. For example, in New Zealand and Spain, the differences between the highest and the lowest regional proportion of the workforce with at least upper secondary education increased by seven and three percentage points respectively, as the better performing regions were able to continue increasing their share of highly educated individuals. Across the non-OECD countries considered, the share of the workforce with at least upper secondary education also increased everywhere except for Bulgaria, where regional differences in educational attainment remained stable. Similar to OECD countries, in Colombia and the Russian Federation, the narrowing of such differences was mainly driven by large improvements in the regions that originally showed the lowest levels of educational attainment.

Definition

At least upper secondary education includes high schools, lyceums, vocational schools and preparatory school programmes (ISCED 3 and 4) up to Doctoral or equivalent degree (ISCED 8).

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2000 2017; TL2. Due to difference in methodology, data for Mexico and Japan are not presented.

Further information

OECD (2017), Education at a Glance 2017: OECD Indicators, OECD Publishing, Paris, *http://dx.doi.org/10.1787/eag-2017-en*.

OECD Regional Well-Being: *www.oecdregionalwellbeing.org*.

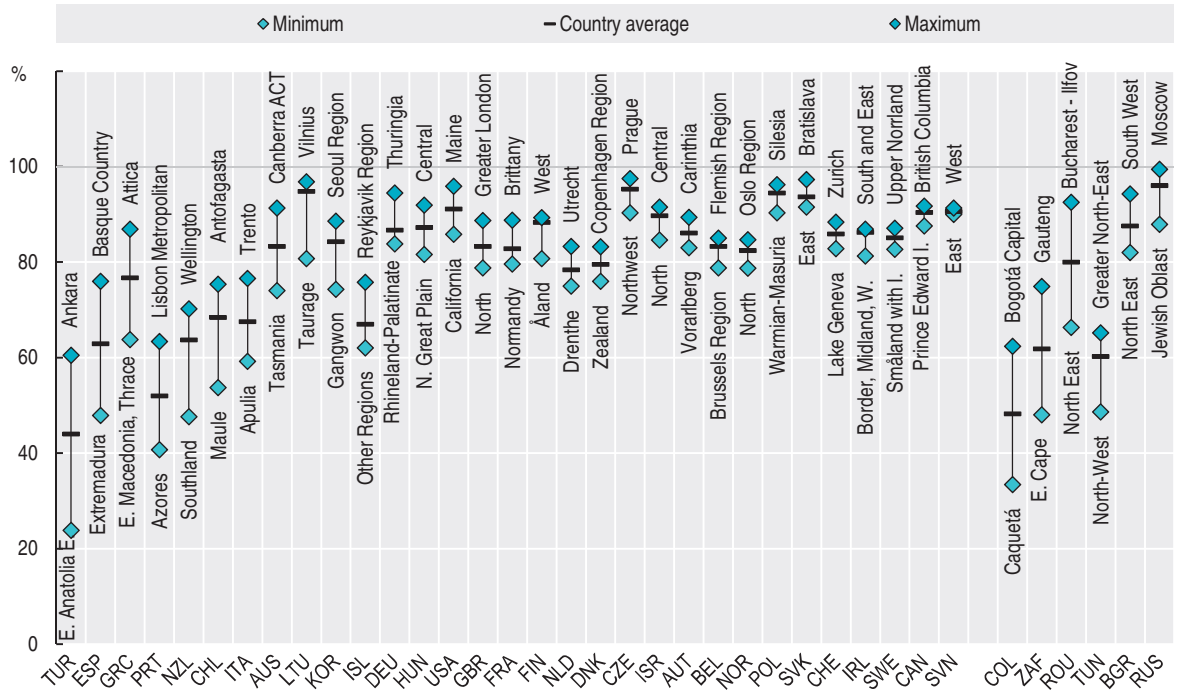
Figure notes

2.1: Latest available year 2017; Canada, Colombia, Israel, Korea, New Zealand and United States 2016; Australia, Chile, Russian Federation and South Africa 2015; Tunisia 2014; Iceland 2012. Japan is not included due to lack of recent data.

2.2: First year available 2000; Switzerland 2001; South Africa 2002; Iceland 2003; Colombia, Finland and Italy 2005; Turkey 2006; Denmark 2007; Chile 2009; Australia and Slovenia 2010.

2.1. Regional variation in the % of the labour force with at least secondary education, 2017

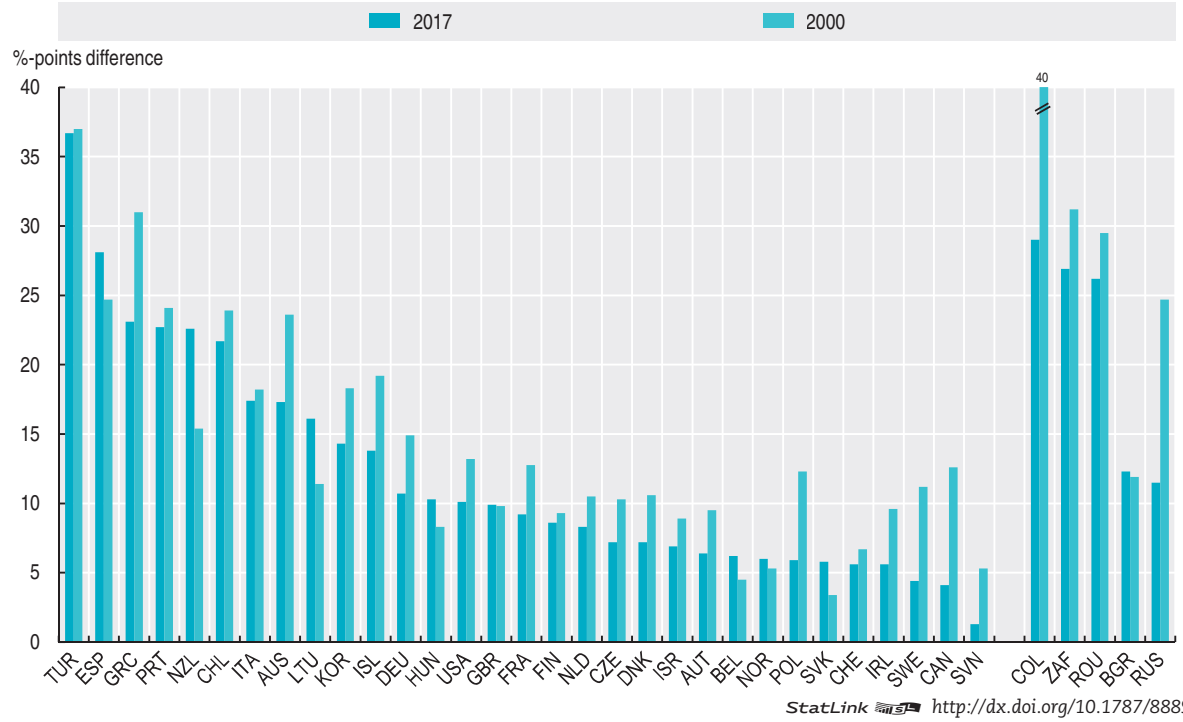
Labour force 15 years old or older, large regions (TL2)



StatLink http://dx.doi.org/10.1787/888933816991

2.2. Gap between highest and lowest regional % of labour force with at least secondary education

Labour force 15 years old or older, large regions (TL2)



StatLink http://dx.doi.org/10.1787/888933817010

Access to services

Lower income countries often have larger regional disparities in broadband access.

Access to services is an important dimension of well-being which can change remarkably between different places within a country. Having easy access to services, such as public transport or efficient telecommunication networks, can improve access to markets, increase the connectivity of regions and therefore foster their economic development.

The provision of a high-speed Information Communication and Technology (ICT) network can be a key factor to provide services to remote areas and to facilitate the adoption of new technologies. Regional differences in the percentage of households with broadband access are strongly pronounced both in countries with a high ICT penetration, such as France, Israel, the United States and New Zealand, and countries with low average ICT access such as Mexico or Turkey (Figure 2.3). In these last two countries, broadband access in the region with the highest proportion of households with broadband connection is more than three times higher than in the region with the lowest access.

Part of regional differences in broadband access can be explained by the urban-rural divide. Regions that are mostly agglomerated, where more than half of the population live in a functional urban area, show, on average, a higher share of broadband connection than other less densely populated regions (80% and 76%, respectively). However, this gap has been halved since 2007. Korea and the Netherlands are the two countries with the highest average proportion of households with broadband connection; at the same time, they show very low regional disparity in this indicator.

The rise of information technologies and information infrastructures has enabled an increase in the availability of services delivered through the Internet. Online access can facilitate the provision and delivery of public services and increase transparency. In this respect, the proportion of the population interacting with public authorities through the Internet provides a measure of both the availability of online public services and how people in regions are receptive to new ways to contact public authorities. In the subset of 19 OECD countries observed, 60.5% of individuals used the Internet in 2017 to interact with public authorities. Regional variation is most pronounced in the United Kingdom, Hungary, Portugal, France and Spain, where the share of people using Internet to deal with public services can differ by more than 20 percentage points. Copenhagen (Denmark), Upper Norrland (Sweden), Helsinki-Uusimaa (Finland) and Oslo and Akershus (Norway) are the leading regions in this usage of the web, whereas the region of Apulia has the lowest rate with only 16% of the individuals connecting with public services online (Figure 2.4).

Definition

The broad dimension of "access to services" can be broken down into several domains, such as the ease of access to the place where a specific service is provided (physical accessibility), its affordability (economic accessibility) and the extent to which the access is favoured or constrained by norms, values and laws (institutional accessibility).

The share of individuals using the Internet to interact with public authorities, includes the use of ICT by individuals to exchange information and services with governments and public administrations (e-government).

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

Eurostat, Survey on ICT (information and communication technology) usage in households and by individuals using the Internet for public services.

Reference years and territorial level

Share of households with broadband access to the Internet and individuals who used such means to interact with public authorities: 2017; TL2.

Further information

OECD (2014), How's Life in Your Region?: Measuring Regional and Local Well-being for Policy Making, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264217416-en*.

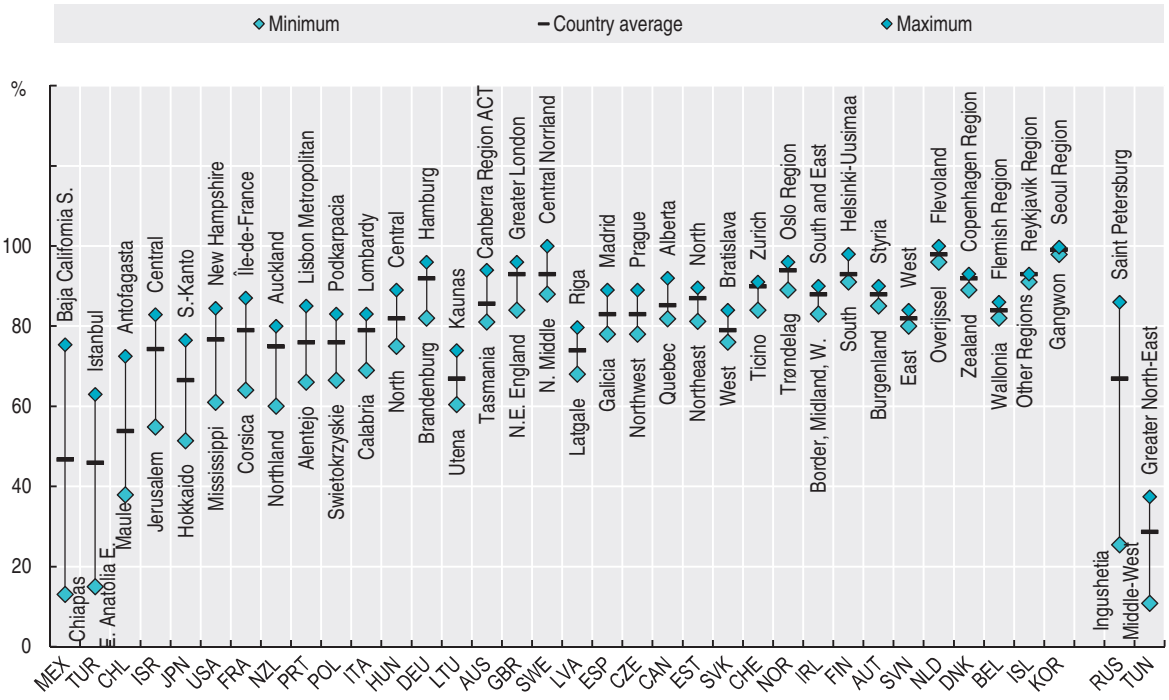
OECD Regional Well-Being: *www.oecdregionalwellbeing.org*.

Figure notes

2.3: Available years: Korea, Mexico and Poland 2016; Australia, Canada, Israel, Japan, Russian Federation and United States 2015; Tunisia 2014; Chile, South Africa and Turkey, 2013; Iceland and New Zealand 2012.

2.3. Regional variation in the % of households with a broadband connection, 2017

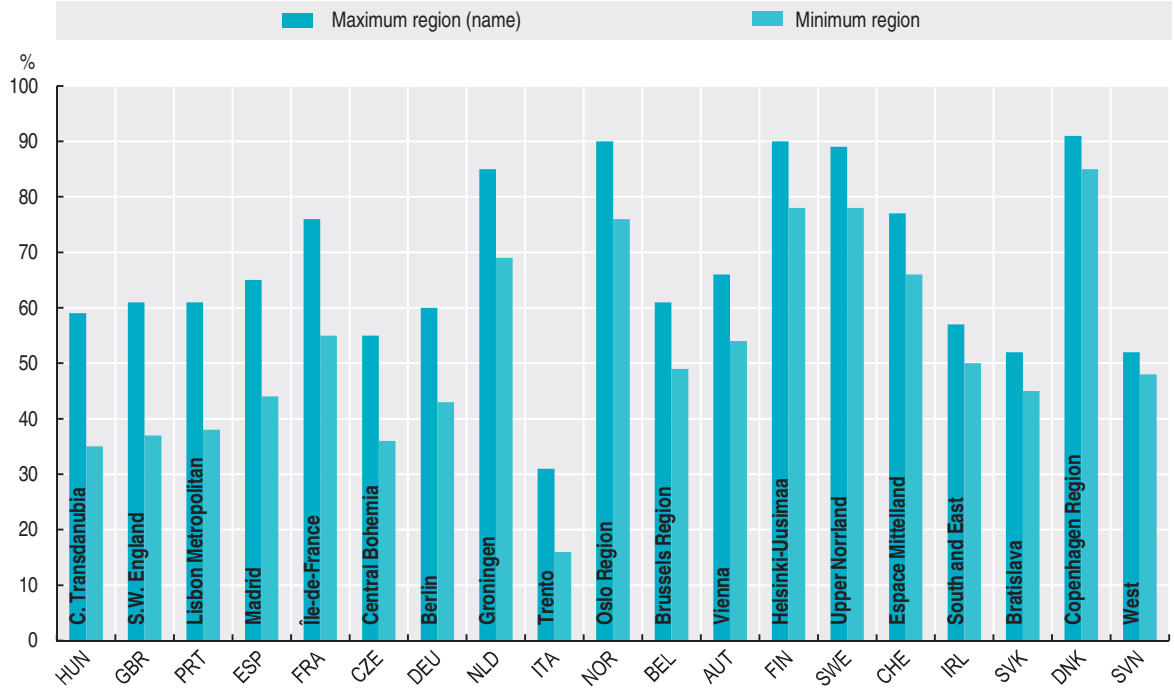
Large regions (TL2)



StatLink http://dx.doi.org/10.1787/888933817029

2.4. Regional variation in the % of population using Internet for public services, 2017

Large regions (TL2)



StatLink http://dx.doi.org/10.1787/888933817048

Household income

In countries with rising disparities in household income, those disparities were mainly driven by faster income per capita growth in the most affluent regions.

Disposable income measures the capacity of households (or individuals) to consume goods and services. As such, it is a better indicator of material well-being of citizens than gross domestic product (GDP) per inhabitant. Regions specialised in natural resources production or regions that host the headquarters of large firms and that employ many workers living in other regions may display a very high GDP per capita, which does not necessarily translate into correspondingly high income of their inhabitants.

Disparities in regional disposable income per capita within countries are generally smaller than those in terms of GDP per capita. Even so, per capita disposable income in Mexico City (Federal District, Mexico), Canberra (Capital Territory, Australia), Ankara (Turkey), Gisborne Region (New Zealand) and Tel Aviv District (Israel), was in 2016 more than two times higher than in Chiapas, Tasmania, South-eastern Anatolia, East/ Northland Region and Jerusalem District, respectively. Similarly, in Australia, Mexico, Slovak Republic and the United States, inhabitants in the top income region had on average income that were over 50% higher than the national average (Figure 2.5).

In roughly half of OECD countries, income disparities between the richest and poorest regions further increased during the last decade, this increase was particularly large in Israel, Canada and the United Kingdom where the ratio of income per capita between the top 10% and the bottom 10% of regions grew by more than 1.4% on average per year over the period 2011-16 (Figure 2.7).

Definition

Disposable income of private households is derived from the balance of primary income by adding all current transfers from the government, except social transfers in kind, and subtracting current transfers from the households such as income taxes, regular taxes on wealth, regular inter-household cash transfers and social contributions. The primary income of private households is defined as the income generated directly from market transactions, i.e. the purchase and sale of goods and services.

Regional disposable household income is expressed in USD purchasing power parities (PPP) at constant prices (year 2010).

The Gini index is a measure of inequality which takes on values between 0 and 1, with zero interpreted as perfectly equal distribution. Here the Gini index is applied to the disposable household income of individuals living in the same region. See Annex C for further details.

However, disparities decreased in various other countries, most notably in Hungary, Chile and Portugal. In countries with decreasing regional disparities, income convergence was predominantly driven by larger growth in the bottom regions. Analogously, regional divergence in income was generally driven by above average increases in disposable income in the richest regions, with some exception like Belgium, Spain and Italy (Figure 2.7).

Differences in income are not only observed across regions, but also for households living in the same region. Levels of income inequality within regions differ, and these differences are particularly high in all large OECD countries as well as in some small countries with a dominant urban centre. For example, the difference between the Gini coefficients of the District of Columbia and the state of Utah in the United States (around 0.14) is of the same magnitude of the difference in the Gini coefficient between Mexico and the OECD average (Figure 2.6).

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

OECD (2016), "Detailed National Accounts, SNA 2008 (or SNA 1993): Final consumption expenditure of households", OECD National Accounts Statistics (database), *http://dx.doi.org/10.1787/data-00005-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2011-16; TL2.

Regional data are not available in Iceland, Luxembourg, Switzerland and Turkey.

Further information

OECD Regional Well-Being: *www.oecdregionalwellbeing.org*.

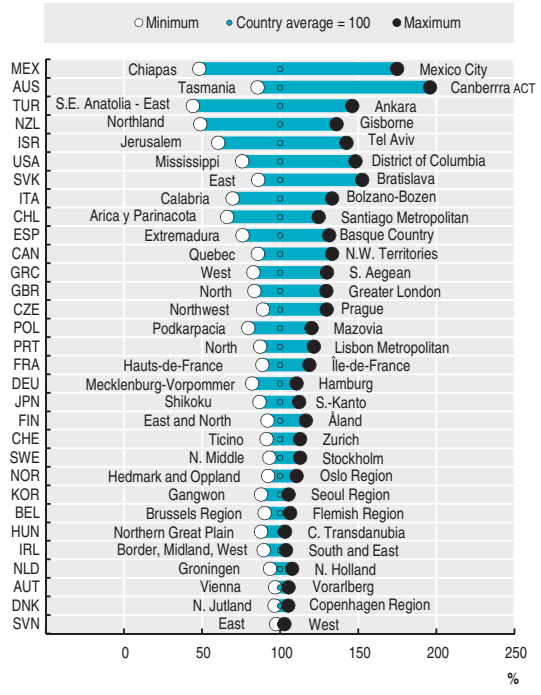
Figure notes

2.5-2.7: Last available year: 2016; Canada, Finland, France, France, France, Germany, Hungary, Ireland, Japan, Mexico, New Zealand, Norway, Poland, Portugal, Slovenia, Spain and Turkey, 2015; Belgium and Switzerland, 2014; Italy and Sweden, 2013; Chile 2012.

2.7: First available year: Chile, Ireland, Israel, and Slovak Republic 1996; United Kingdom 1997; New Zealand 1998; Slovenia 1999; Austria, Denmark, Finland, Hungary, Portugal, and Sweden 2000; Japan 2001; Estonia and Mexico 2008; Korea and Poland 2010; Norway 2011.

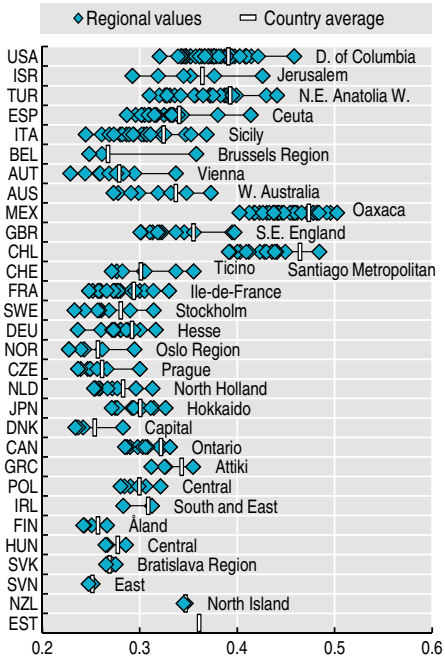
2.7: The figure shows the change between 2006 and 2016 in the ratio of average disposable income per capita of the richest 10% and poorest 10% TL2 regions. Richest and poorest regions are the aggregation of regions with the highest and lowest income per capita and representing 10% of national population.

2.5. Disposable income per capita in TL2 regions as a share of national average, 2016



StatLink http://dx.doi.org/10.1787/888933817067

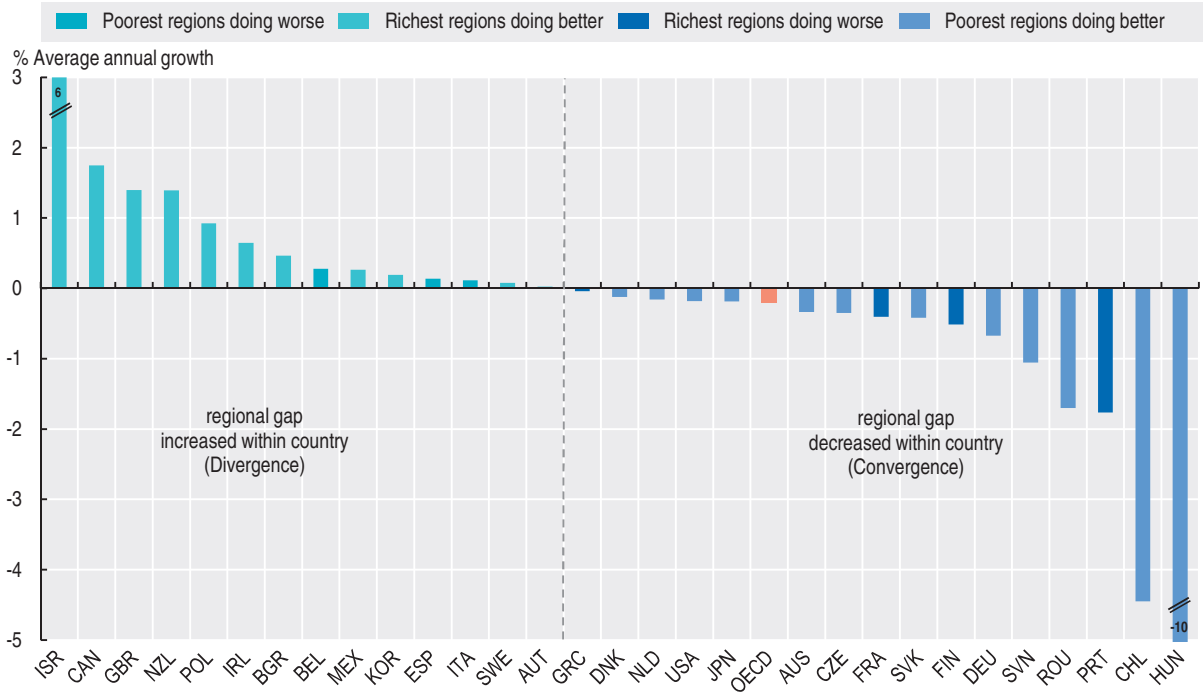
2.6. Gini of disposable income within large regions (TL2), 2014



StatLink http://dx.doi.org/10.1787/888933817086

2.7. Evolution of the regional gap in disposable income per capita, 2011-16

Evolution of the ratio top 10% over bottom 10% large regions, and reason for the change



StatLink http://dx.doi.org/10.1787/888933817105

Housing conditions

Households spend on average 20% of their income on housing, but this proportion can vary up to 50% between the least and the most expensive regions in a country.

The availability and affordability of housing are essential for households to meet their basic need in terms of shelter, personal space, and a sense of security, including financial security. The number of rooms per person is a standard measure of whether people are living in crowded conditions; across OECD regions this number varies widely, from around half a room in Northeastern Anatolia - East (Turkey) to three in Vermont (United States), a difference almost twice as large as that observed across OECD countries.

In 2016, regional differences in the number of rooms per person were largest in Canada, the United States, Spain and Turkey (Figure 2.8). Using the number of rooms per person has, however, some limitations, which may hamper regional and international comparisons. First, it does not take into account the possible trade-off between the number of rooms in the dwelling and its location: some households may choose to live in smaller dwellings located in better serviced areas than in larger homes in less desirable locations. Second, it does not take into account the overall size of accommodation, which is generally smaller in urban areas than in rural areas.

On average, people in OECD countries spend just over 20% of their annual household gross adjusted disposable income on housing (and 25% for the sample of 20 countries in Figure 2.9). Families living in Greater London, UK and Vienna, Austria spend 50% more for housing than those in Northern Ireland and Burgenland, respectively. Housing expenditure exceeds 35% of household disposable income in the capital regions of Oslo (Norway) and Jerusalem (Israel); whereas it is below 20% in every region of Australia and the Slovak Republic (Figure 2.9).

Definition

The number of rooms per person is a measure of whether people are living in crowded conditions. It is measured as the number of rooms in a dwelling, divided by the number of people living in the dwelling. It excludes rooms such as a kitchenette, scullery/utility room, bathroom, toilet, garage, consulting rooms, offices or shops.

The share of household gross adjusted disposable income spent on housing and maintenance of the house as defined in the System of National Accounts (SNA), includes actual and imputed rentals for housing, expenditure on maintenance and repair of the dwelling (including miscellaneous services), on water supply, electricity, gas and other fuels, as well as the expenditure on furniture, furnishings, household equipment and goods and services for routine home maintenance. This measure of housing costs excludes household payments for interest and principal on housing mortgages.

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

2016 or latest available year; TL2.

2.8: Mexico and Switzerland, 2015; Denmark, Tunisia and Turkey, 2014; Japan and New Zealand, 2013; Belgium, Finland, Ireland, Norway, Poland, Slovenia and Sweden, 2012; Canada, Greece, Italy, Portugal and United Kingdom, 2011; France and Korea, 2010. No regional data are available for Chile and Iceland.

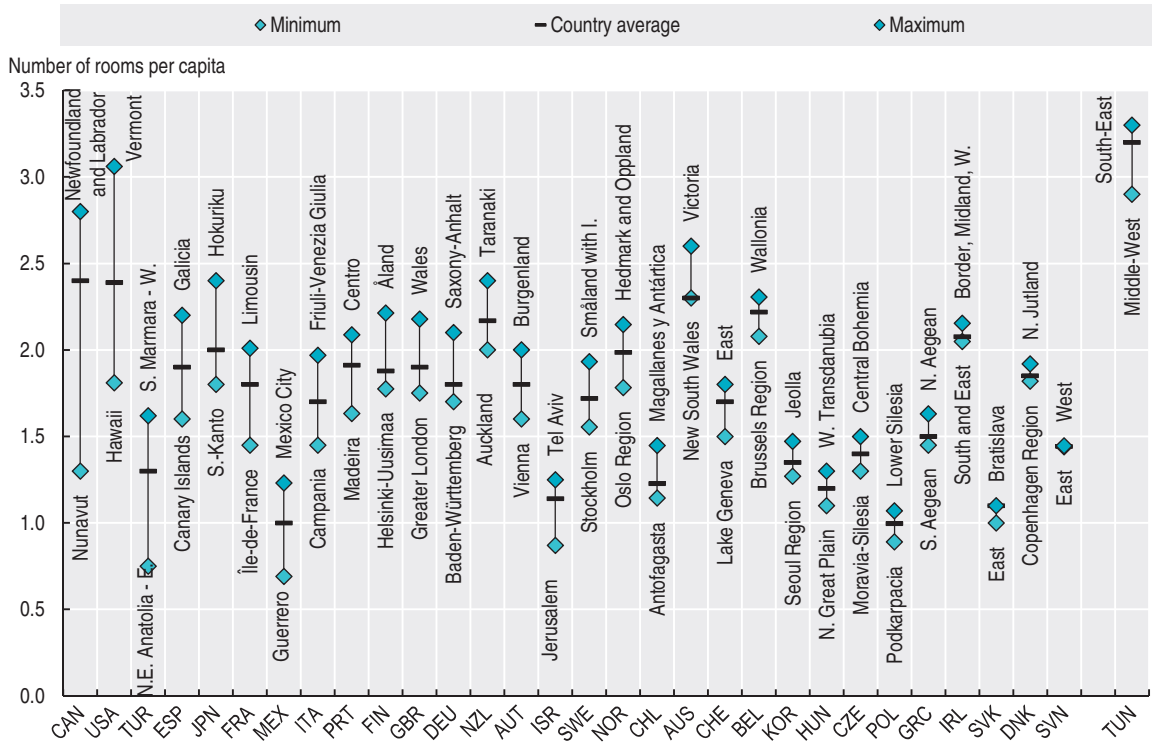
2.9: Australia, Austria, Hungary, Ireland, Israel, Italy and Spain, 2015; Belgium, 2014; Japan, New Zealand, Poland, Switzerland and Turkey, 2013; Norway, 2012; Portugal, 2011.

Further information

OECD Regional Well-Being: *www.oecdregionalwellbeing.org*.

2.8. Regional differences in number of rooms per person, 2016

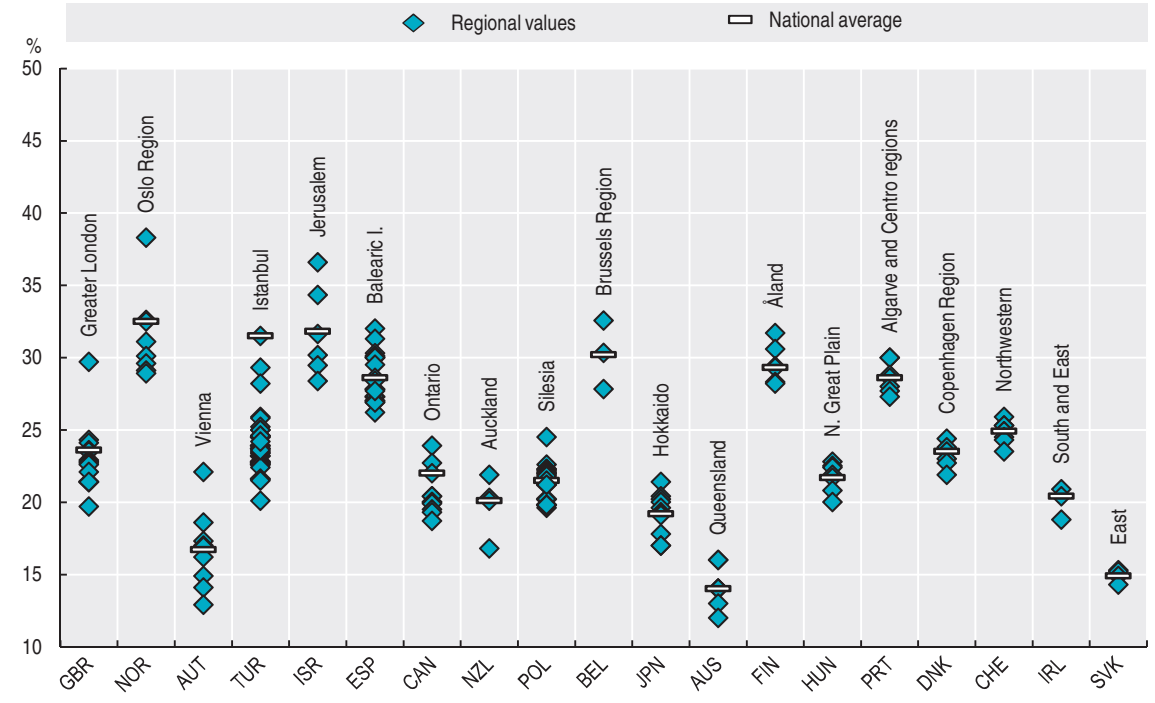
Large regions (TL2)



StatLink http://dx.doi.org/10.1787/888933817124

2.9. Housing expenditure as a share of household income, 2016

Large regions (TL2)



StatLink http://dx.doi.org/10.1787/888933817143

Jobs

Although unemployment rates across OECD countries are now close to pre-crisis levels, differences within countries remain high and can reach up to 20 percentage points, with youth unemployment exhibiting particularly high disparities.

Unemployment in the OECD area has decreased and, at 6.8% in 2017, is now close to the pre-crisis level. Despite the general reduction in unemployment in 70% of OECD regions, regional disparities remain substantial and almost unchanged. In 2017, unemployment rates differ by 6 percentage points within OECD countries, exactly the same average regional disparities as in 2011. However, while in 2011 almost one-fourth of the OECD regions had an unemployment rate above 10%, this share declined to 18% in 2017, representing 66 large regions. The largest regional disparities are found in Turkey, Italy, Spain, Greece and Belgium, with a difference of at least 10 percentage points between the highest and lowest regional unemployment rates (Figure 2.10). Unemployment rates are generally lower in urban regions, with some exceptions like in Denmark or the United Kingdom, where they are one percentage point higher than in rural regions. Higher unemployment rates are mostly found in intermediate remote regions, which do not benefit from the proximity to cities. On the other hand, intermediate regions close to cities have seen faster decrease of unemployment.

Even more worrying, in some regions of Italy, Greece, and Tunisia, more than 50% of youths remain unemployed. Regional disparities are generally much higher for youth unemployment than for total unemployment, with, for example, the highest youth unemployment rates in Lake Geneva (Switzerland) and South-East Anatolia East (Turkey), roughly twice the national average (Figure 2.11).

Definition

Employed people are all persons who, during the reference week, worked at least one hour for pay or profit or were temporarily absent from such work. Family workers are included.

Unemployed persons are defined as those who are without work, are available for work, and have taken active steps to find work in the last four weeks. The unemployment rate is defined as the ratio between unemployed persons and labour force, where the latter is composed of unemployed and employed persons.

OECD has established a regional typology to take into account geographical differences and enable meaningful comparisons between regions belonging to the same type. All regions in a country have been classified as predominantly rural, intermediate and predominantly urban. This typology has been refined by introducing a criterion of distance (driving time) to large urban centres. Thus a predominantly rural region is classified as predominantly rural remote (PRR) if at least 50% of the regional population needs more than one hour to reach a large urban centre; otherwise, the rural region is classified as predominantly rural close to a city (PRC). The extended typology has been applied to North America, Europe and Japan (see Annex A for the detailed methodology). In the case of Europe, the classification in predominantly urban and predominantly rural regions is reported following the population-grid based classification developed by Eurostat (2013).

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2017; TL2.

Further information

OECD Regional Well-Being: *www.oecdregionalwellbeing.org*.

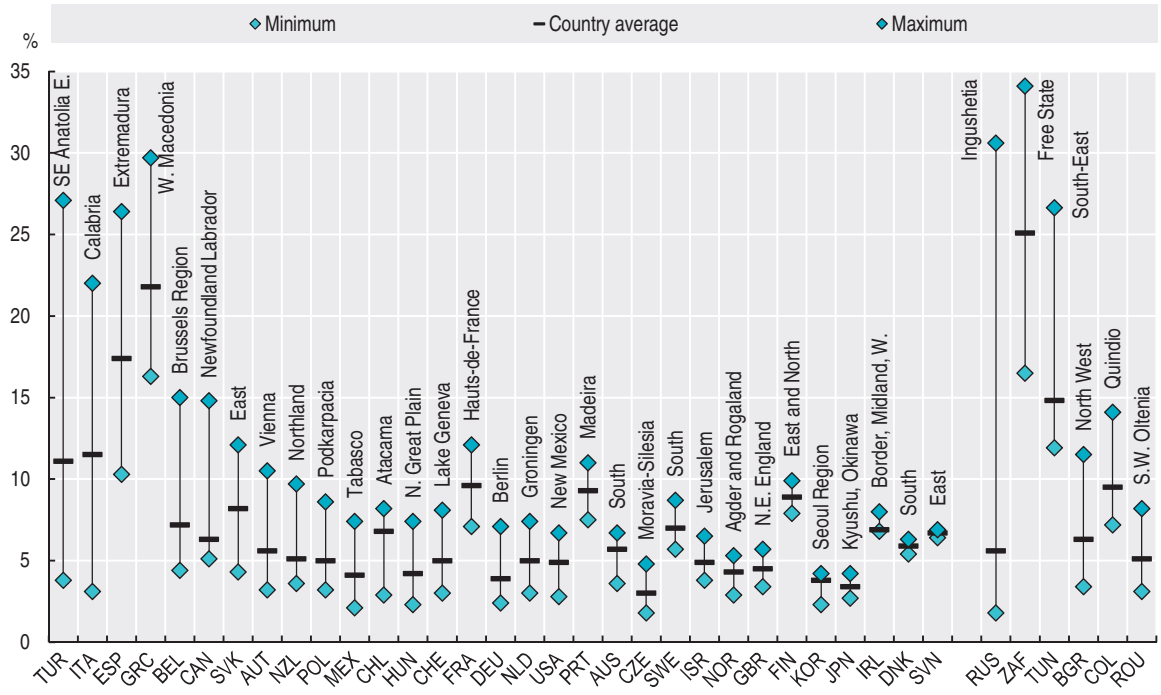
Figure notes

2.10: 2017 or latest available year: Chile, Colombia, Israel, Korea, Mexico, New Zealand, 2016; Japan and Russian Federation, 2015; South Africa and Tunisia, 2014.

2.11: 2017 or latest available year: Peru, Russian Federation and United States, 2014.

2.10. Regional differences of unemployment rate, 2017

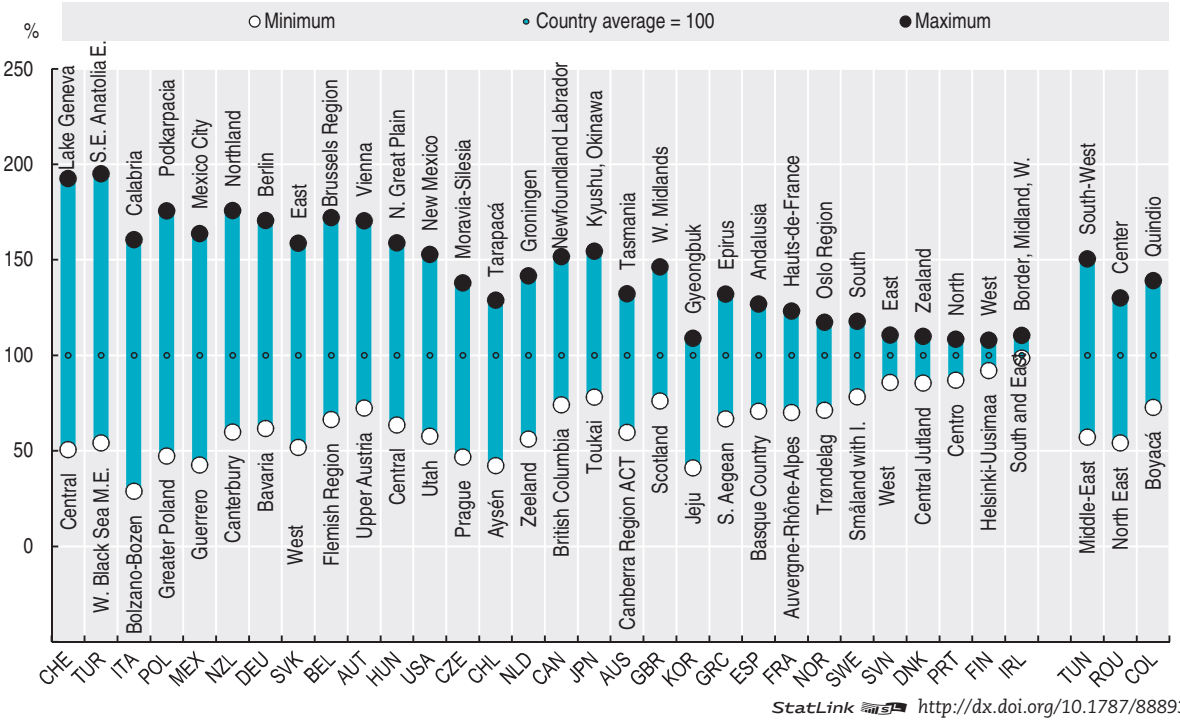
Large regions (TL2)



StatLink http://dx.doi.org/10.1787/888933817162

2.11. Regional youth unemployment rate as a share of national average, 2017

Large regions (TL2)



StatLink http://dx.doi.org/10.1787/888933817181

Health status

Gender differences in life expectancy have decreased by one year since 2000, up to two years in some regions in Italy, New Zealand, Portugal and Switzerland.

Good health is an important determinant of quality of life and also contributes to other well-being dimensions such as being able to pursue education, having a job, and engaging in economic activities. In 80% of OECD regions, life expectancy at birth, a common measure of health outcomes, exceeded 81 years in 2016. Average life expectancy has risen by almost four years since 2000 and now stands at around 82 years. Within OECD countries, regional disparities in life expectancy in this same period remained generally stable, with the exceptions of Finland, Greece and Turkey, where the residents of the regions with the lowest longevity in 2000 increased their life expectancy by two years more than the regions where residents had the highest life expectancy. At the opposite end of the spectrum, in Hungary, Belgium, Korea and the Czech Republic, life expectancy improved more rapidly in the healthiest region than in the remaining ones (Figure 2.12).

Relatively low levels of life expectancy (below 75 years) are found in 17 OECD regions, which include ten Mexican States, four Latvian regions, Northern Hungary and Nunavut (Canada). While difference in life expectancy among OECD countries can be up to eight years (between Japan and Mexico), within countries such difference can reach 11 years between British Columbia and Nunavut in Canada, and six years between Hawaii and Mississippi in the United States (Figure 2.12).

Women live longer than men in all regions, with an average difference of more than five years. In Pieriga (Latvia), Southern Estonia (Estonia) and Lublin Province (Poland) gender differences in life expectancy are the largest, exceeding nine years. In non-OECD regions like Mari El Republic (Russian Federation) and Vilnius county (Lithuania), women live more than 12 years longer than men (Figure 2.13). However, the gender differences in life expectancy has decreased in most countries between 2000-16, with men improving their life expectancy faster, reducing the gender gap by more than two years in some regions like West Coast (New Zealand), Ticino (Switzerland), Aosta Valley (Italy), Northern Norway and Madeira (Portugal).

Regions with the highest gender gap in life expectancy in 2000 had different profiles. These regions have relatively low life expectancies for both sexes compared to the national average in seven out of thirty countries, like Northern Territory (Australia), Wallonia (Belgium), Scotland (United Kingdom), Aosta Valley (Italy), Guerrero (Mexico), Madeira (Portugal), and Eastern Slovenia. The life expectancy gap in other countries was driven by men who had shorter lives, with the exception of four regions, where women had noticeably longer lives compared to their country average, like Los Ríos (Chile), Epirus (Greece), Jeju (Kora) and Eastern Black Sea (Turkey) (Figure 2.13). The progress in longevity is due to advances in medicine, which have first benefited people with potentially shorter lives. Interestingly, the majority of the regions that had a high gender gap in life expectancy have seen an improvement in the density of physicians in their region relative to their country.

Definition

Life expectancy at birth measures the number of years a new born can expect to live, if death rates in each age group stay the same during her or his lifetime.

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata. United States: Life Expectancy, Measure of America, *www.measureofamerica.org*.

Reference years and territorial level

2016; TL2. Estonia, Latvia and Lithuania, TL3.

Further information

OECD Regional Well-Being: *www.oecdregionalwellbeing.org*.

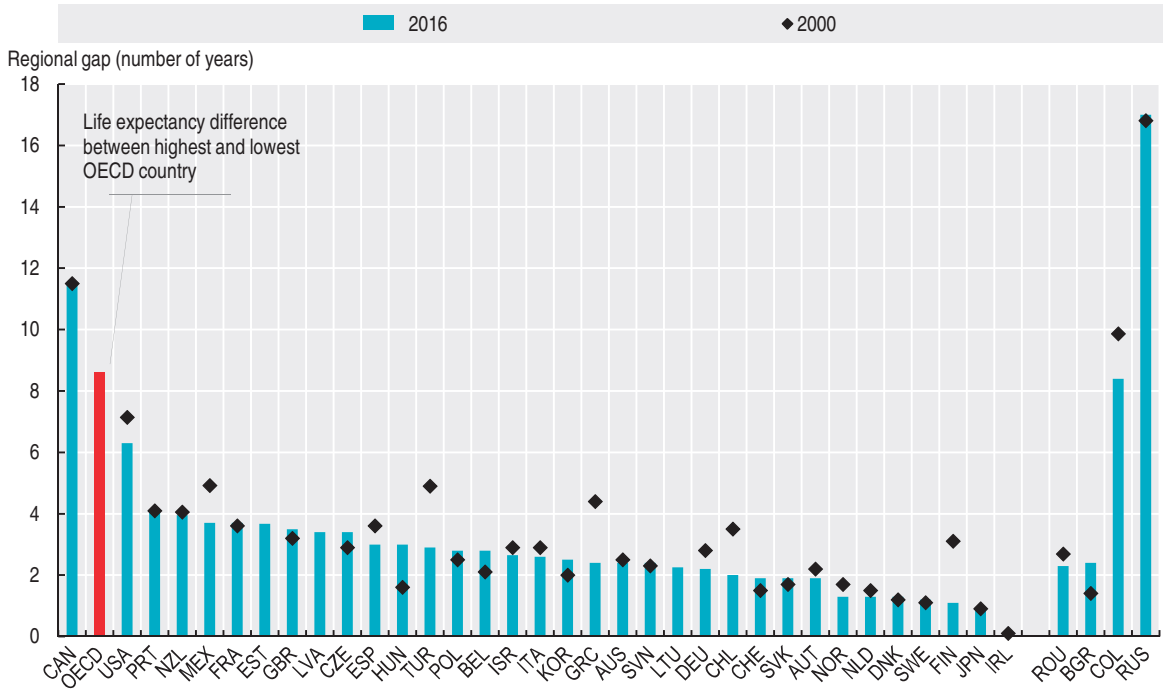
Figure notes

2.12 and 2.13: 2016 data or latest available year: Australia, Canada and Korea, 2014; Japan, 2010. First year 2000, or first available year: Netherlands and New Zealand, 2001; Slovenia, 2005; Australia, 2010; Turkey, 2011. First year values are not presented for Estonia, Latvia and Lithuania due to lack of long historical time series. No regional data are available for Iceland.

2.13: Each observation (point) represents a TL2 region of the countries shown in the vertical axis.

2.12. Regional differences in life expectancy at birth, 2000 and 2016

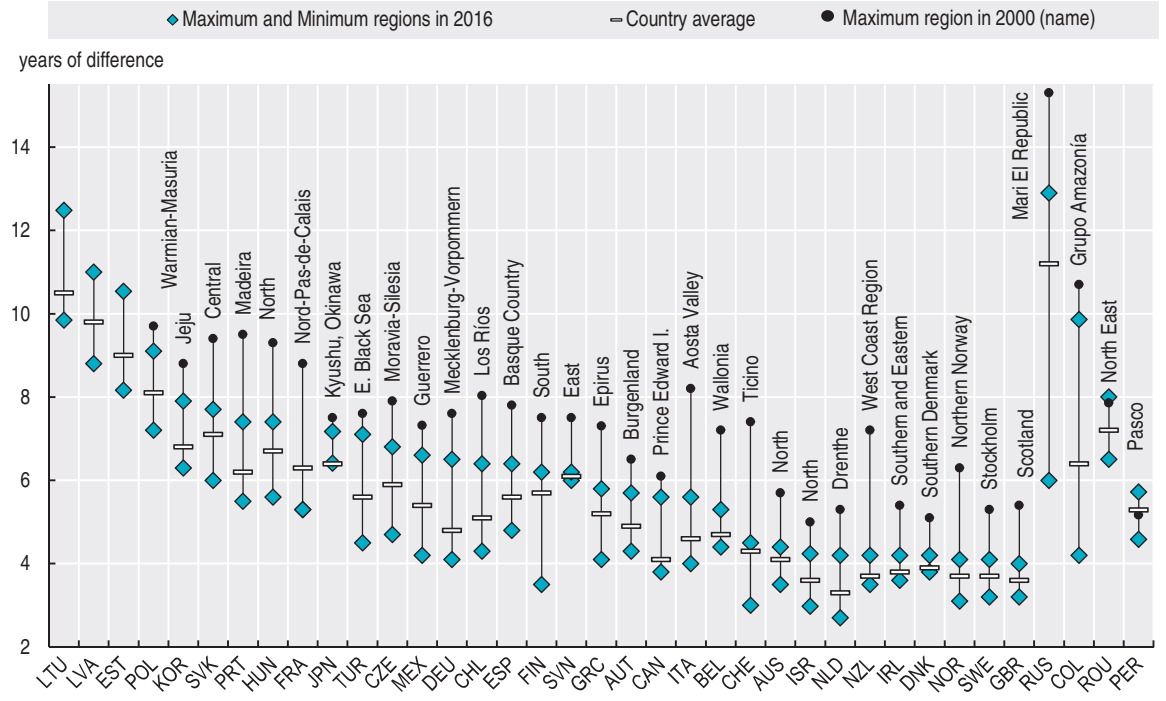
Life expectancy of total population, large regions (TL2)



StatLink http://dx.doi.org/10.1787/888933817200

2.13. Regional gender gap in life expectancy at birth (female-male), 2016

Gender gap regional disparity in 2016 and region with highest gap in 2000 (TL)



StatLink http://dx.doi.org/10.1787/888933817219

Safety

Homicide rates and car theft have decreased in practically all regions since the early 2000s, with the main exceptions being regions in Chile, the United States and Mexico.

Safety contributes to the attractiveness of regions and is often connected with other well-being outcomes such as education, health and jobs. Consequently, policies aiming to ensure safe environments for residents often build on the complementarities with those other dimensions.

Homicide rates have, on average, decreased within the OECD from almost three homicides per 100 000 inhabitants in 2000-02 to around two in 2014-16. However, in 20% of OECD regions, the homicides rates increased by more than 10% during this period, including regions in Canada, Chile, Italy, Mexico and the United States. Capital regions followed the overall downtrend, except for Santiago (Chile) and Mexico City (Federal District, Mexico). Mexico has the highest regional variation in homicides among OECD countries. In 2013-16, the state of Colima (Mexico) recorded more than 62 homicides per 100 000 inhabitants, while in Yucatan (Mexico) there were less than 3 homicides per 100 000 inhabitants (Figure 2.14). Large regional differences in homicides rates are also observed in the United States, Chile and Canada, the regional difference being around 12 homicides per 100 000 inhabitants, due to high rates in the District of Columbia, Aysén and Yukon, respectively, compared to the rest of the country. Among the safest countries are Austria (0.5), Norway, Iceland and Switzerland (all 0.6), where differences between top and bottom regions are on average also relatively low (Figure 2.14).

Theft of private property also has a negative effect on people's well-being. Over the most recent period (2008-10 to 2014-16), the number of car thefts has decreased in OECD countries by 30% and regional disparities decreased also by the same percentage. Chile and Greece are exceptions, as car thefts increased by 40% and 2%, respectively. In Chile, the situation has mainly been exacerbated by the region where the number of thefts was lowest, whereas in Greece the increase mainly occurred in the capital region with already has a high number of car thefts (Attica, with 422 vehicles per 100 000 inhabitants). In 2014-16, the OECD countries showing at the same time high values and large regional disparities for car thefts were Germany, Slovak Republic, Chile and Mexico (Figure 2.15). In Berlin (Germany), Bratislava Region (Slovak Republic) and Prague (Czech Republic), the rate of car theft was more than two and a half times higher than the national average. Among the non-OECD countries, in the region Madre de Dios (Peru) the rate of car theft was almost nine times that of the country as a whole, and in Sakhalin Oblast (Russian Federation) more than three times higher than the Russian average (Figure 2.15).

Definition

Homicide is the unlawful killing of a human being with malice aforethought, more explicitly intentional murder. Reported homicides are the number of homicides reported to the police. The homicide rate is the number of reported homicides per 100 000 inhabitants.

Motor vehicle theft is defined as the theft or attempted theft of a motor vehicle. A motor vehicle is a self-propelled vehicle that runs on land surfaces and not on rails. The motor vehicle theft rate is the number of reported thefts per 100 000 inhabitants.

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2014-2016; TL2. TL3 for Estonia, Latvia, Lithuania.

Homicides: Three-year average. No recent regional data for Netherlands

Car thefts: Three-year average. No regional data are available for Iceland, Korea, Netherlands, Norway and the United Kingdom.

Further information

OECD (2015), Measuring Well-being in Mexican States, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264246072-en*.

OECD (2014), How's Life in Your Region? Measuring Regional and Local Well-being for Policy Making, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264217416-en*.

OECD Regional Well-Being: *www.oecdregionalwellbeing.org*.

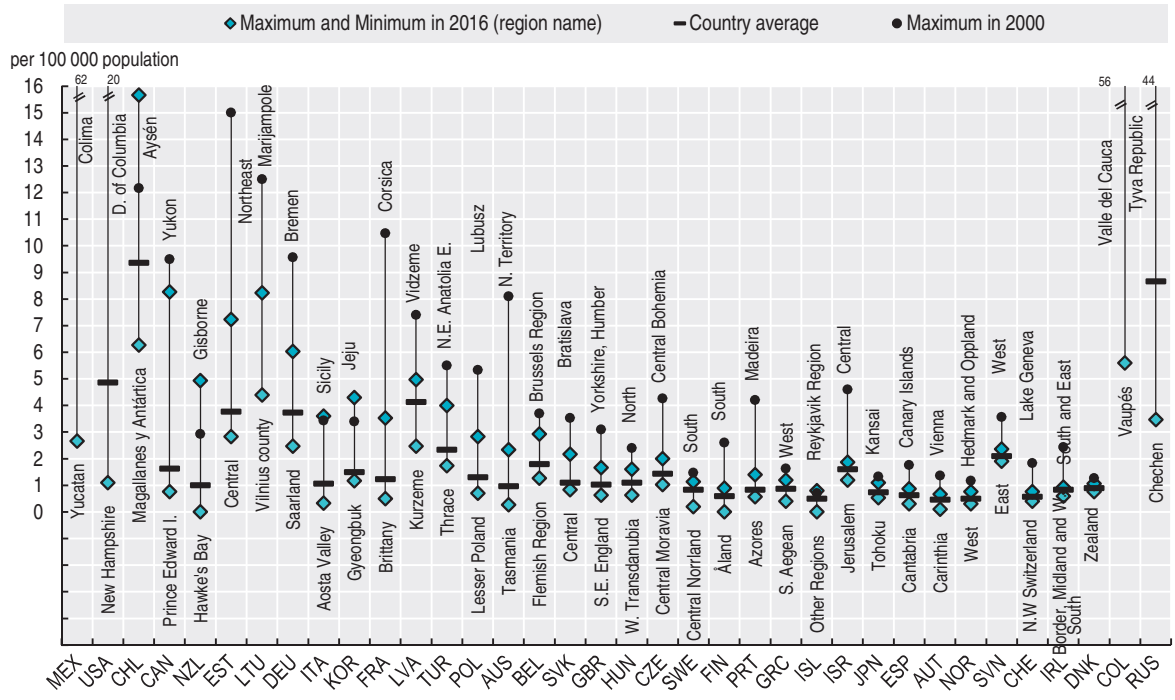
Figure notes

2.14: Three years average 2014-16;Israel, Japan, Lithuania and Latvia, 2013-15; New Zealand, Peru, Russian Federation and Sweden, 2012-14; Turkey 2011-13; Slovenia 2010-12.

2.15: Three years average 2014-16; Estonia, Japan and Mexico, 2013-15; Latvia, New Zealand, Peru, Russian Federation and Sweden, 2012-14; Italy and Turkey, 2011-13; Slovenia, 2010-12.

2.14. Regional variation in homicides per 100 000 inhabitants

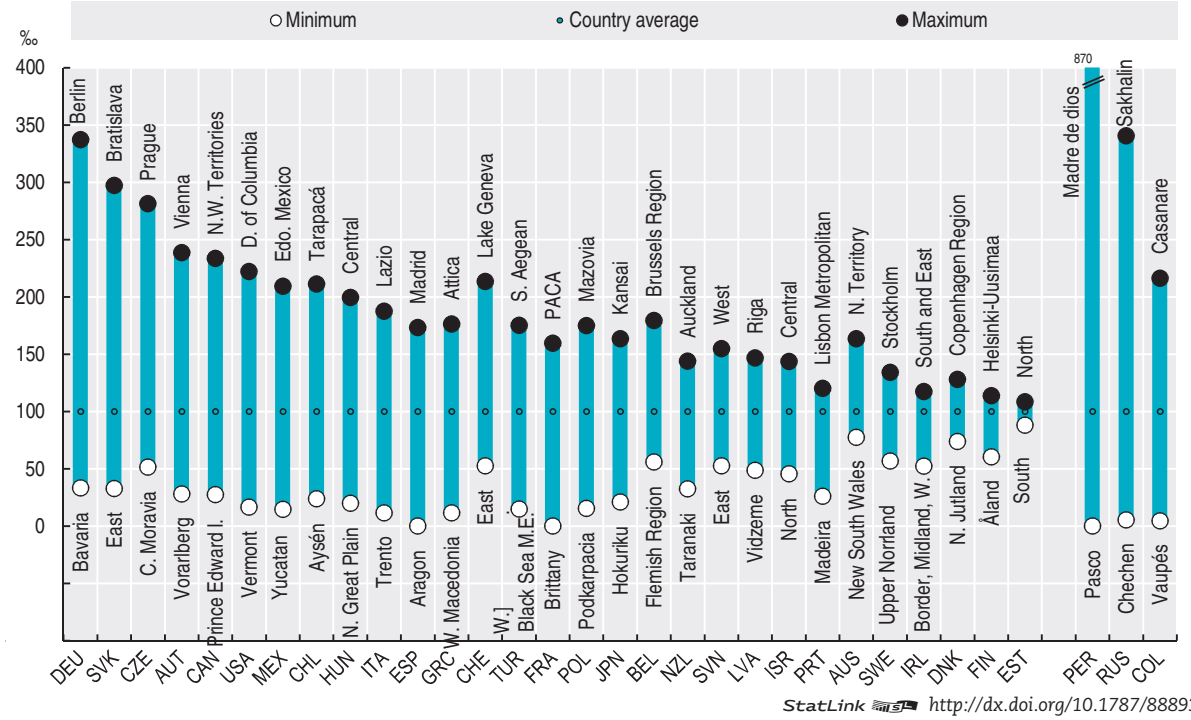
Three-year average (2014-16), large regions (TL2)



StatLink http://dx.doi.org/10.1787/888933817238

2.15. Regional range in reported car thefts per 100 000 inhabitants

Three years average 2013-16, Large regions (TL2)



StatLink http://dx.doi.org/10.1787/888933817257

Civic engagement and governance

The share of registered voters who are actively voting is higher in urban regions and this gap has further increased since 2000.

Civic engagement and quality of governance are important aspects of well-functioning democracies. Voter turnout, measured as the percentage of people who cast a ballot in the national election, is a type of civic engagement through formal politics (Ekman et al., 2009). On average, across OECD regions, voter turnout is 70%. Nevertheless, many regions show much lower values in this dimension; for example, in 35 out of 367 OECD regions (i.e., around 10% of the regions covered) electoral participation is below 50%. These regions are distributed across Chile (15), Poland (9), Switzerland (5), Portugal (2), Finland (1), Greece (1), Japan (1), and Slovenia (1) (Figure 2.16).

Such differences across OECD regions in terms of voter turnout are not necessarily driven by national patterns, as large differences are observed also within countries. In Mexico, Canada, Finland, and Greece, the difference between the region with the highest voter turnout and the one with the lowest is above 20 percentage points. Large regional disparities (e.g., above 15 percentage points) are present even in countries with high national levels of voter turnout (above the 75%) such as Australia and France (Figure 2.16).

On average, voter turnout in OECD countries has not significantly changed in the last 17 years – an increase of 2 percentage points. This slight increase has mainly occurred in predominantly urban regions, whereas voter turnout remained almost stable in predominantly rural regions. Registered voters are more willing to vote in predominantly urban regions in 12 out of 20 countries, with a difference of greater than 10% compared to rural regions in Latvia, Estonia, Slovakia and Hungary. Intermediate regions had higher voter turnout in Austria, Switzerland and Denmark (Figure 2.17).

Definition

Voter turnout refers to the extent of electoral participation in national elections. It is defined as the percentage of individuals who cast a ballot in a national election with respect to the population registered to vote. Data on voter turnout are gathered by National Statistical Offices and National Electoral Management Bodies.

The OECD has established a regional typology to take into account geographical differences and enable meaningful comparisons between regions belonging to the same type. All regions in a country have been classified as predominantly rural, intermediate and predominantly urban.

Source

OECD (2018), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2000-2018; TL2.

Further information

Territorial grids and regional typology (Annex A).

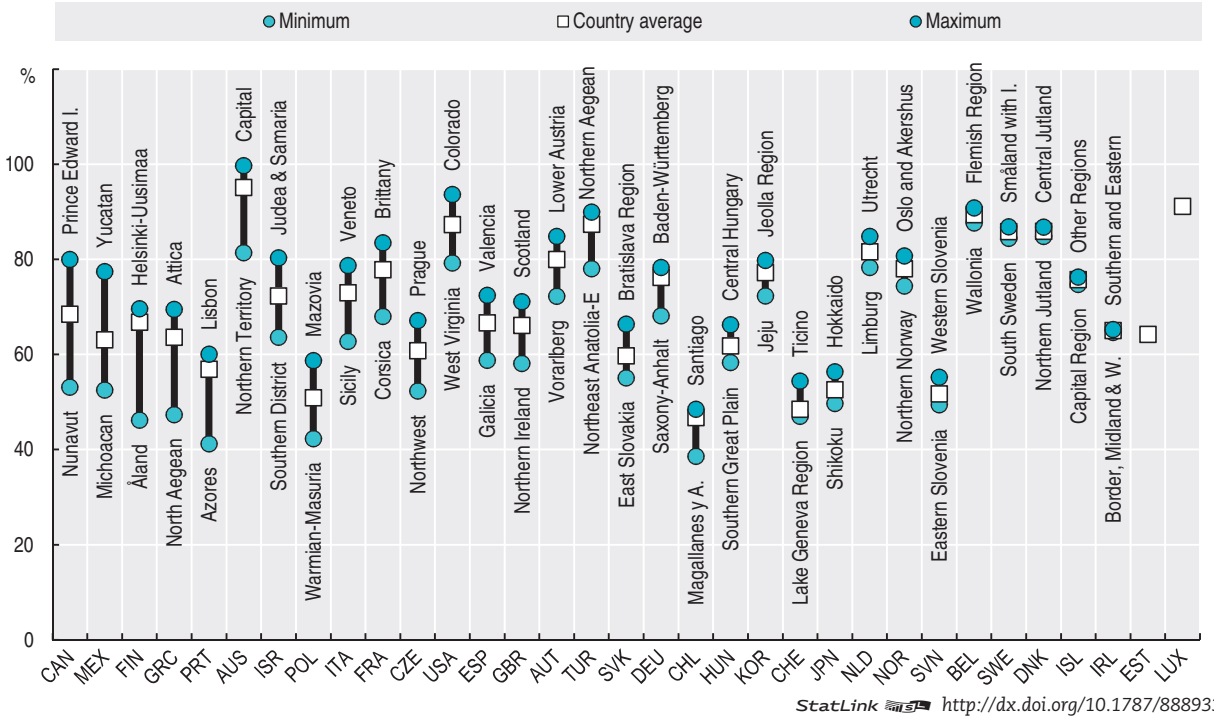
Ekman, J. and E. Amna (2009), "Political Participation and Civic Engagement: Towards A New Typology", Youth & Society, Orebro University.

Figure notes

2.16-2.17: 2018 was the latest available year for Italy; 2016 for Australia, United States, Spain, Slovak Republic, Iceland, and Ireland; 2015 for Canada, Finland, Greece, Portugal, Israel, Poland, United Kingdom, Turkey, Switzerland, Denmark, and Estonia; 2014 for Hungary, Japan, Slovenia, Belgium, and Sweden; 2013 for Luxembourg; and 2012 for Mexico.

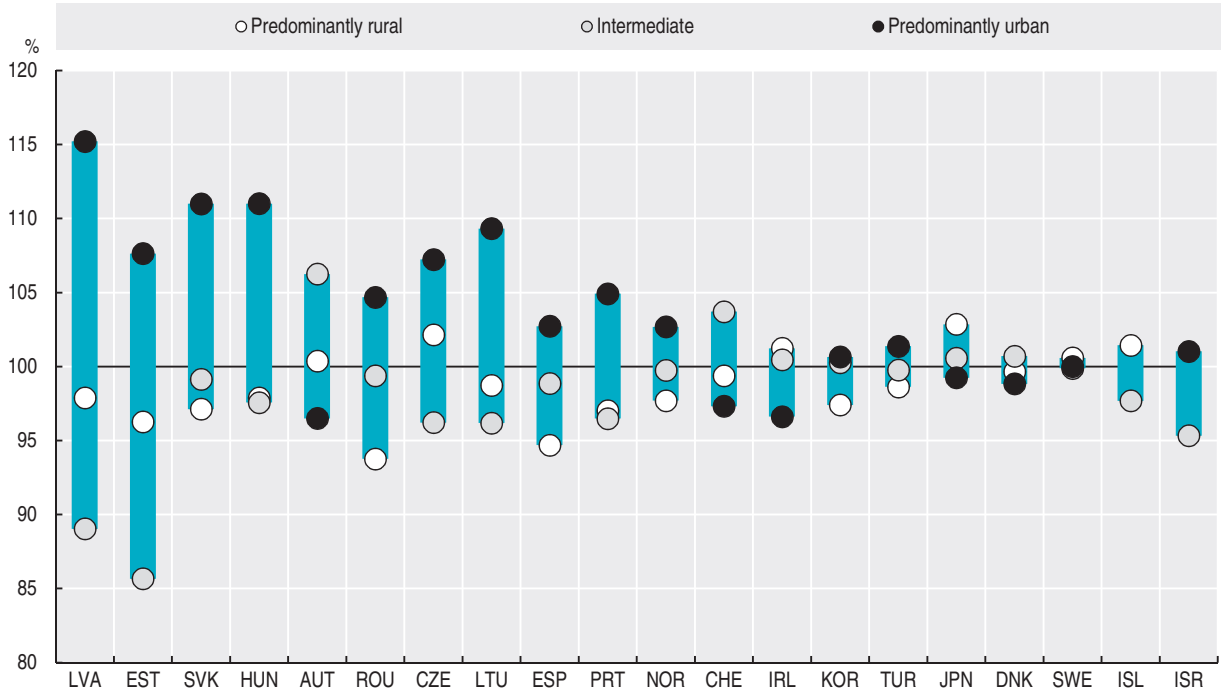
2.17: First available year was 2001 for the United Kingdom, Italy, Poland, Australia, Denmark, and Norway; 2002 for France, Turkey, Germany, Austria, the Slovak Republic, Portugal, Ireland, Czech Republic, Slovenia, Hungary, and Sweden; 2003 for Belgium, Switzerland, Iceland, and Estonia; 2004 for Luxembourg; 2006 for Finland; and 2009 for Israel.

2.16. Regional disparities in voter turnout, 2017 (TL2)



StatLink http://dx.doi.org/10.1787/888933817276

2.17. Voter turnout by type of regions as a percentage of national average, 2017



StatLink http://dx.doi.org/10.1787/888933817295

Environment

People are still exposed to unsafe levels of air pollution in 60% of OECD regions. While air quality has improved across OECD countries since 2000s, PM 2.5 has started to grow again in recent years, particularly in Italy, Japan, Korea and Slovenia.

The exposure to air pollution in regions and cities is greatly associated with the industry located in the territory, its level of urbanisation and its transportation system. Fine particulate matters (PM2.5) are generally emitted from the combustion of liquid and solid fuels for industrial and housing energy production, vehicles and biomass burning in agriculture.

In 2015, in 60% of the OECD regions, people were on average exposed to levels of air pollution that were higher than those recommended by the World Health Organization (pollution concentration level of 10 µg/m^3), although this was down from 74% in 2000. Italy and Korea were the countries where the highest regional concentrations of air pollution were observed in OECD countries. In the regions of Lombardy (Italy) and the Capital Region (Korea), pollution levels were above 30 PM2.5 per person (Figure 2.18). In contrast, people in all regions in Canada, Australia, New Zealand, Estonia, Norway, Ireland and Finland were exposed to low levels of air pollution (below 10 µg/m^3).

Air pollution levels varied greatly from region to region. The largest differences are observed in Italy, Chile and Mexico.

Definition

Particulate matter (PM), refers to a complex mixture of sulphates, nitrates, ammonia, sodium chloride, carbon, mineral dust and water suspended in the air. Particles can be classified in two categories according to their origin (WHO, 2013). On the one hand, primary PM is emitted from the combustion of liquid and solid fuels for industrial and housing energy production as well as from the erosion of the pavement of roads. On the other hand, secondary PM is the result of chemical reactions between gaseous pollutants.

PM2.5 air pollution data does not differentiate between manmade dust (anthropogenic) and non-anthropogenic dust; however, evidence indicates that dust is as hazardous as anthropogenic sources, and as such there are plausibly relevant policy responses such as warning systems that advise vulnerable people to stay indoors when levels are high.

On the flipside, countries such as Finland, Ireland and Belgium present the smallest differences across regions (Figure 2.18).

While a general improvement in air quality across the OECD areas has occurred since 2000, in a few countries air quality actually deteriorated. This happened in Israel, Turkey, Korea, Greece and Italy, with average increases above 5%. In these countries, air pollution increased in the regions with relatively higher exposure to PM2.5, such as Lombardy (Italy), South Aegean (Greece), South Sweden, Southern Eastern Anatolia - East (Turkey), where air pollution increased by more than 10% with respect to their national average over the period 2000-16 (Figure 2.19).

Source

Data collected from OECD (2017) "Exposure to Air Pollution", *OECD Environment Statistics (database), https://doi.org/10.1787/96171c76-en*.

See Annex B for data sources, methodology and country-related metadata.

Reference years and territorial level

2015 (three year average 2013-15); TL2

Further information

Mackie, A., I. Haščič and M. Cárdenas Rodríguez (2016), "Population Exposure to Fine Particles: Methodology and Results for OECD and G20 Countries", *OECD Green Growth Papers*, No. 2016/02, OECD Publishing, Paris, *https://doi.org/10.1787/5jlsqs8g1t9r-en*.

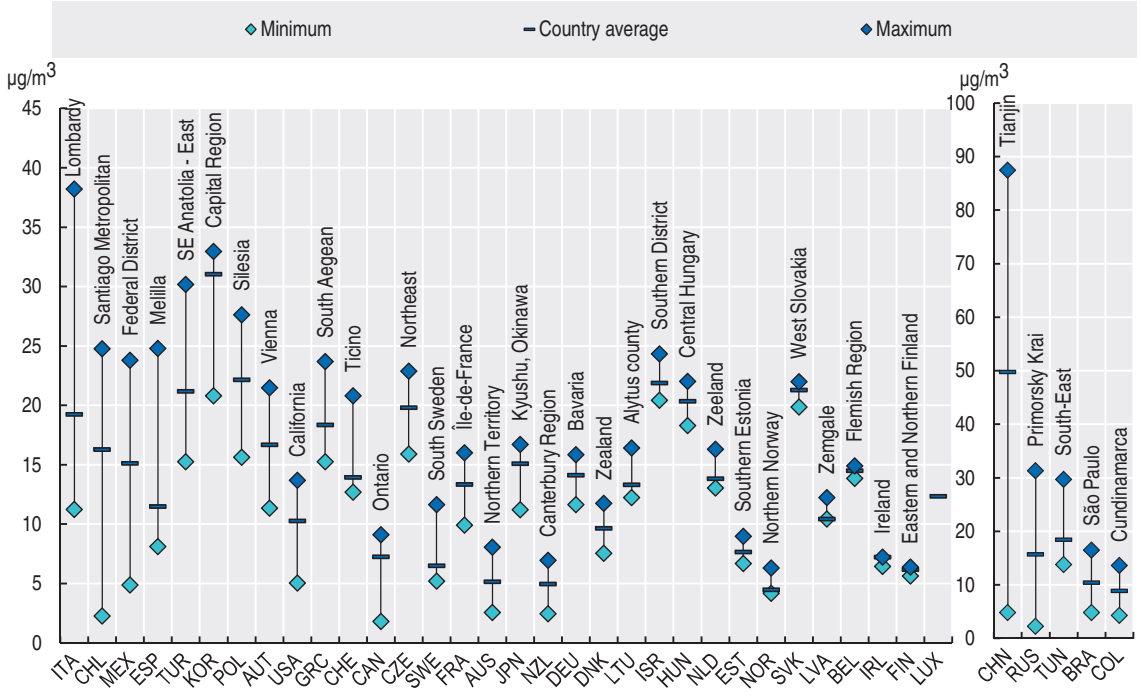
Brezzi, M. and D. Sanchez-Serra (2014), "Breathing the Same Air? Measuring Air Pollution in Cities and Regions", OECD Regional Development Working Papers, No. 2014/11, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jxrb7rkxf21-en*.

OECD Regional Well-Being: *www.oecdregionalwellbeing.org*.

WHO (2013), Health Effects of Particulate Matter: Policy implications for countries in Eastern Europe, Caucasus and Central Asia, *www.euro.who.int/__data/assets/pdf_file/0006/189051/Health-effects-of-particulate-matter-final-Eng.pdf*.

2.18. Regional differences of annual exposure to air pollution, 2015

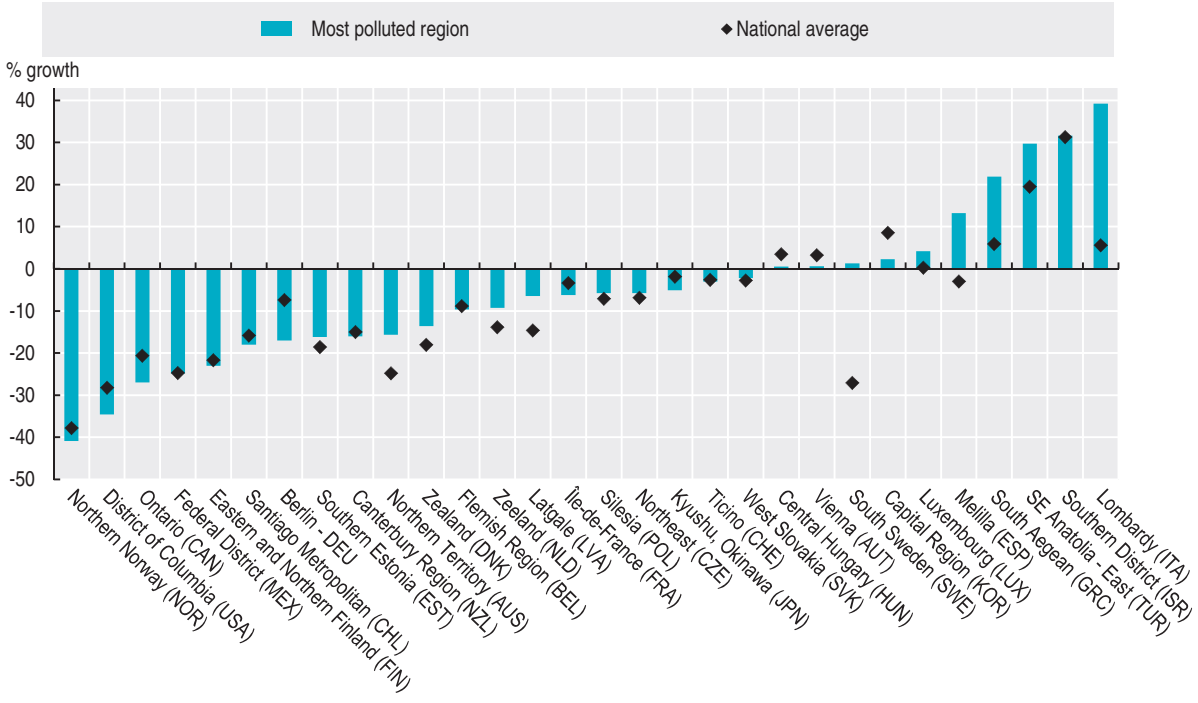
Large regions (TL2)



StatLink http://dx.doi.org/10.1787/888933817314

2.19. Air pollution growth for the highest polluted region 2000-15

Three year averages, large regions (TL2)



StatLink http://dx.doi.org/10.1787/888933817333





3. POPULATION DYNAMICS AND INCLUSIVENESS IN REGIONS

Regional population and changes over time

Elderly dependency ratios in regions

Population mobility among regions

Regional foreign-born population and changes over time

Foreign-born population by age and dependency ratios in regions

The integration of migrants across regions: Education outcomes

The integration of migrants across regions: Labour market outcomes

Gender differences in education and labour market outcomes

Female migrant integration in the labour market

The data in this chapter refer to regions in OECD and non-OECD countries. Regions are classified on two territorial levels reflecting the administrative organisation of countries. Large (TL2) regions represent the first administrative tier of subnational government. Small (TL3) regions are contained in a TL2 region.

Regional population and changes over time

During the past two decades, urban populations have been gradually increasing in the OECD area.

Demographic trends such as population growth can strongly affect economic, social, and environmental conditions that consequently shape national and regional policies. In 2017, around half of the population of the OECD (48%) lived in regions with predominantly urban population ("predominantly urban regions"), which represented only 8% of the total OECD surface area. The remaining population lived in either intermediate regions (27%) or in regions with predominantly rural population ("predominantly rural regions") (Figure 3.1).

In the United Kingdom, the Netherlands, Australia, Korea, Israel and Canada, two-thirds of people lived in regions with predominantly urban population. In contrast, in Ireland, Slovenia, Romania, Estonia, Austria, Finland, the United States, and the Slovak Republic, regions with predominantly rural population accounted for over 37% of the total country population – 1.5 times the OECD average. In Lithuania, Sweden, Norway, Greece, Iceland, Switzerland and Hungary more than two-thirds of the total rural population lives in remote rural regions (Figure 3.1).

In the period from 2000 to 2017, the OECD population grew at an average annual rate of 0.64%. Belgium, Switzerland, Norway, Ireland, New Zealand, Israel, and Australia, displayed positive population growth rates in at least 95% of their regions between 2000 and 2017; in contrast, in Portugal, Poland, Estonia, Japan, Latvia, and Hungary, population growth was much more concentrated spatially, with 60% or more of their respective TL3 regions showing a decrease in total resident population (Figure 3.3 to Figure 3.6).

In 24 out of the 35 OECD countries considered, the share of population in regions with predominantly urban population has increased in the past 17 years; this increase has been particularly pronounced in Estonia, Latvia, Lithuania, Canada, and Finland, where the difference in the population share from 2000 to 2017 is of more than 3 percentage points. In almost all countries, regions with predominantly rural population have seen a decrease in population for the aforementioned period, with the exception of Chile, Mexico, the Slovak Republic, Belgium, and the United States, whose population increased marginally (Figure 3.2).

Definition

OECD has established a regional typology to take into account geographical differences and enable meaningful comparisons between regions belonging to the same type. All regions in a country have been classified as predominantly rural, intermediate or predominantly urban. This typology has been refined by introducing a criterion of distance (driving time) to large urban centres. Thus a predominantly rural region is classified as predominantly rural remote (PRR) if at least 50% of the regional population needs more than one hour to reach a large urban centre by motor vehicle; otherwise, the rural region is classified as predominantly rural close to a city (PRC). The extended typology has been applied to North America, Europe and Japan (see Annex A for the detailed methodology). In the case of Europe, the classification in predominantly urban and predominantly rural regions is reported following the population-grid based classification developed by Eurostat (2013).

Source

OECD (2018), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2000-2017; TL3.

TL2 regions for Brazil, China, Colombia, India, Peru, Russian Federation and South Africa.

Further information

Territorial grids and regional typology (Annex A)

Eurostat (2013), *Urban-Rural typology*, *http://ec.europa.eu/eurostat/web/rural-development/methodology*.

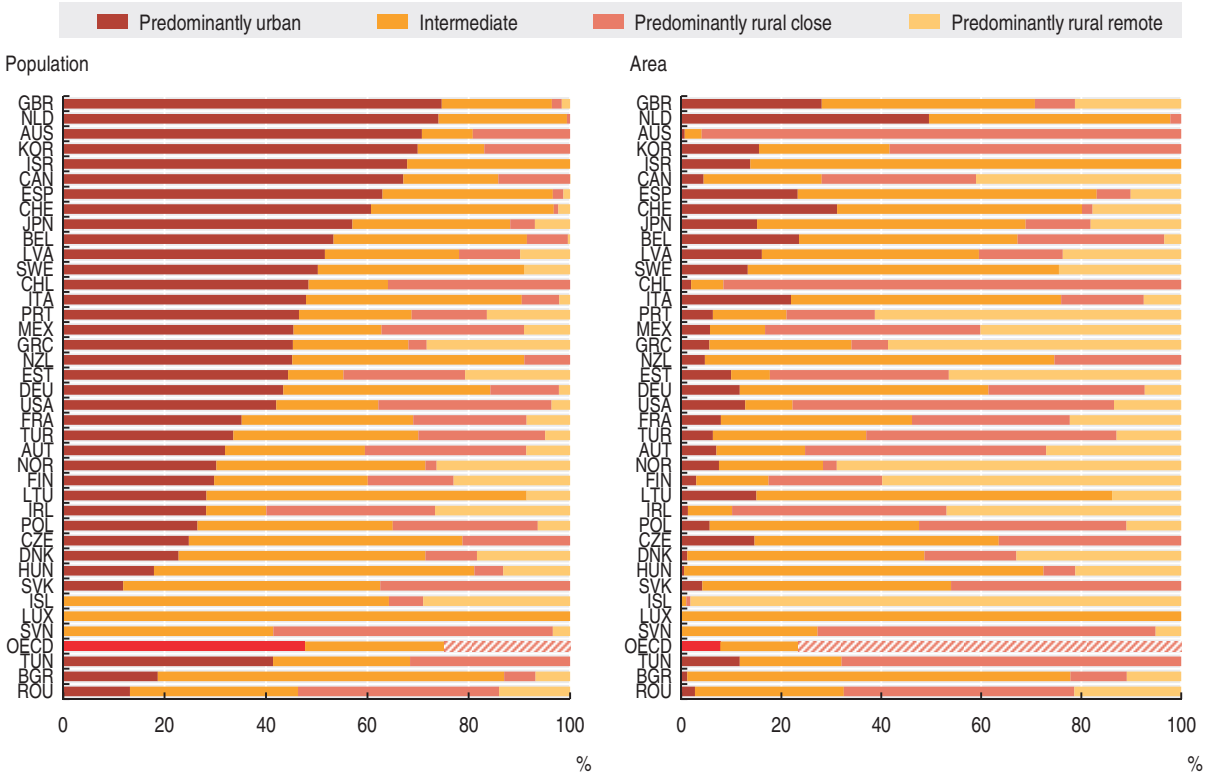
Brezzi, M., L. Dijkstra and V. Ruiz (2011), "OECD Extended Regional Typology: The Economic Performance of Remote Rural Regions", OECD Regional Development Working Papers, 2011/06, OECD Publishing. *http://dx.doi.org/10.1787/5kg6z83tw7f4-en*.

Figure notes

3.1-3.2: 2017 or latest available year: Australia, Canada, Iceland, Japan, New Zealand, United States and Tunisia, 2016. Extended typology not defined for Australia, Iceland, Korea, Latvia and Lithuania.

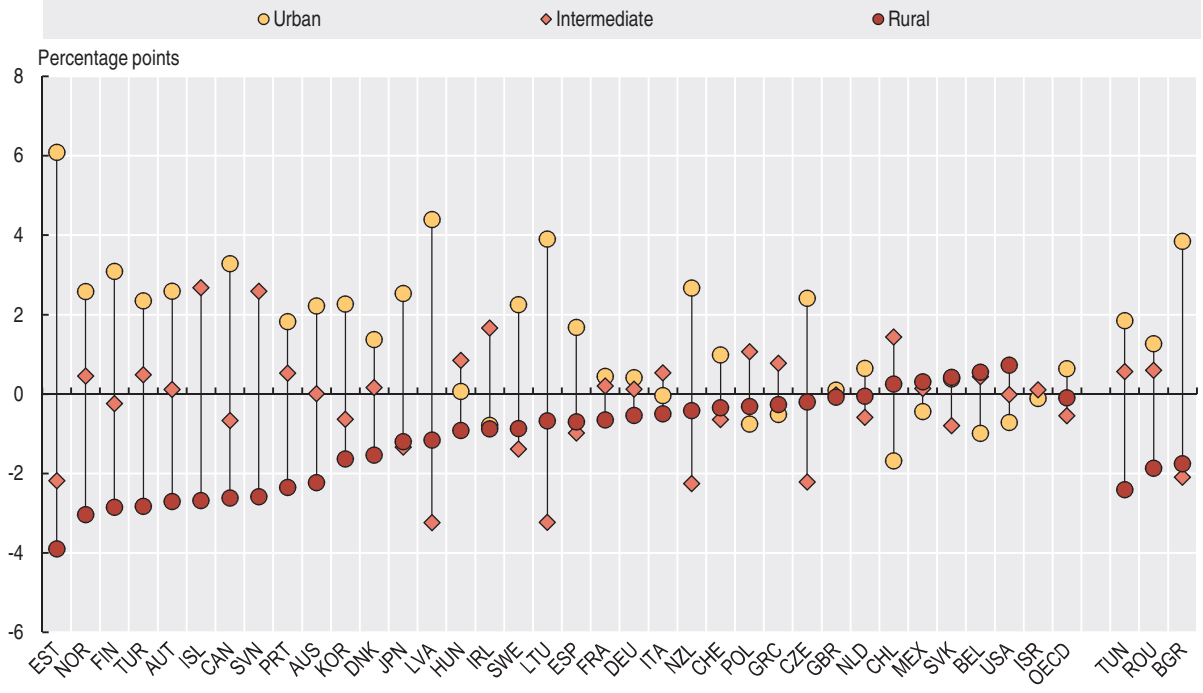
3.2: 2000 or first available year: Australia and Turkey, 2001; Tunisia, 2005.

3.1. Distribution of population and area by type of region (TL3), 2017



StatLink http://dx.doi.org/10.1787/888933817352

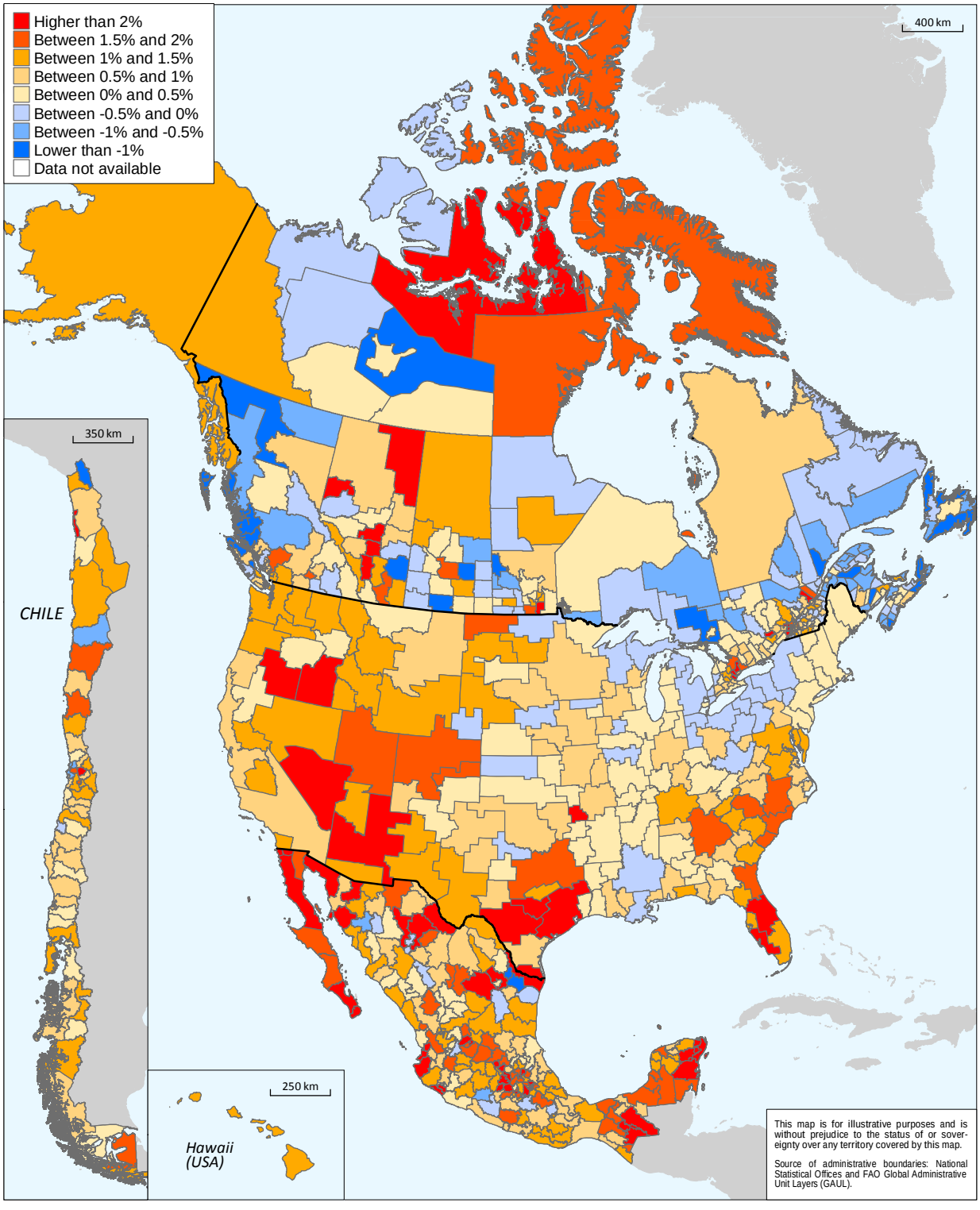
3.2. Change in the share of population by type of region (TL3) from 2000 to 2017



StatLink http://dx.doi.org/10.1787/888933817371

3.3. Regional population growth: North America and Chile, 2000-17

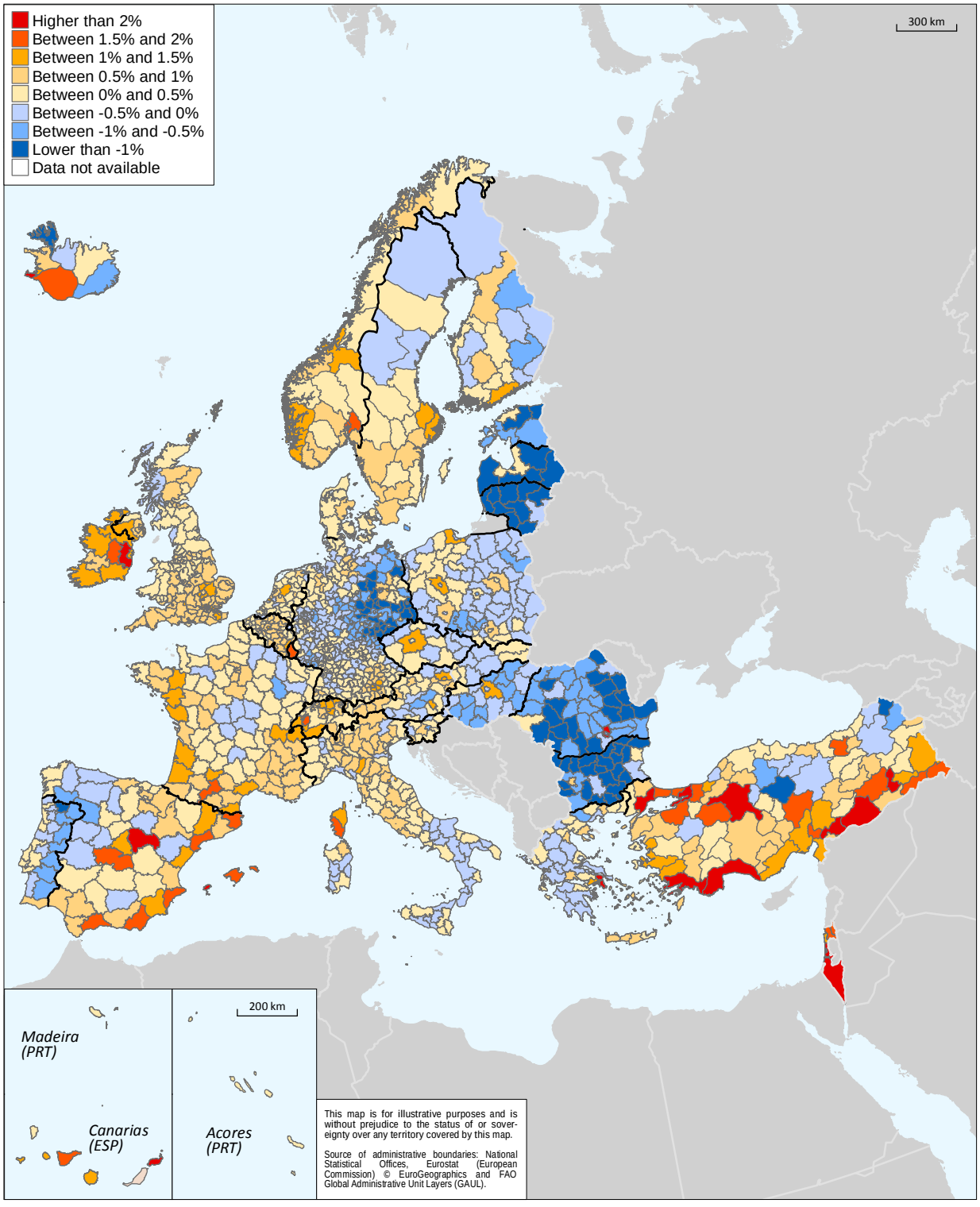
Average annual growth rate, TL3 regions



StatLink http://dx.doi.org/10.1787/888933817390

3.4. Regional population growth: Europe, 2000-17

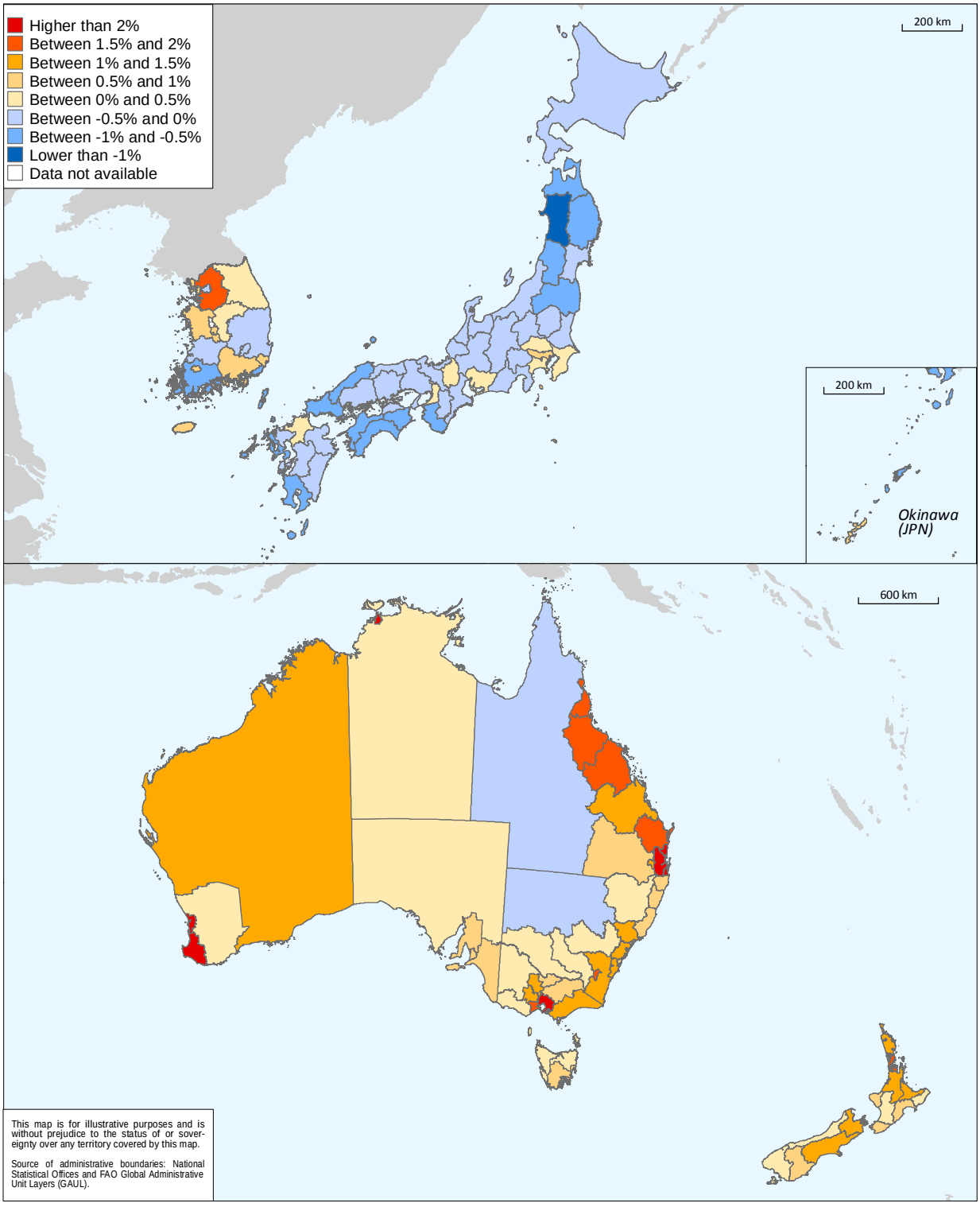
Average annual growth rate, TL3 regions



StatLink http://dx.doi.org/10.1787/888933817409

3.5. Regional population growth: Asia and Oceania, 2000-17

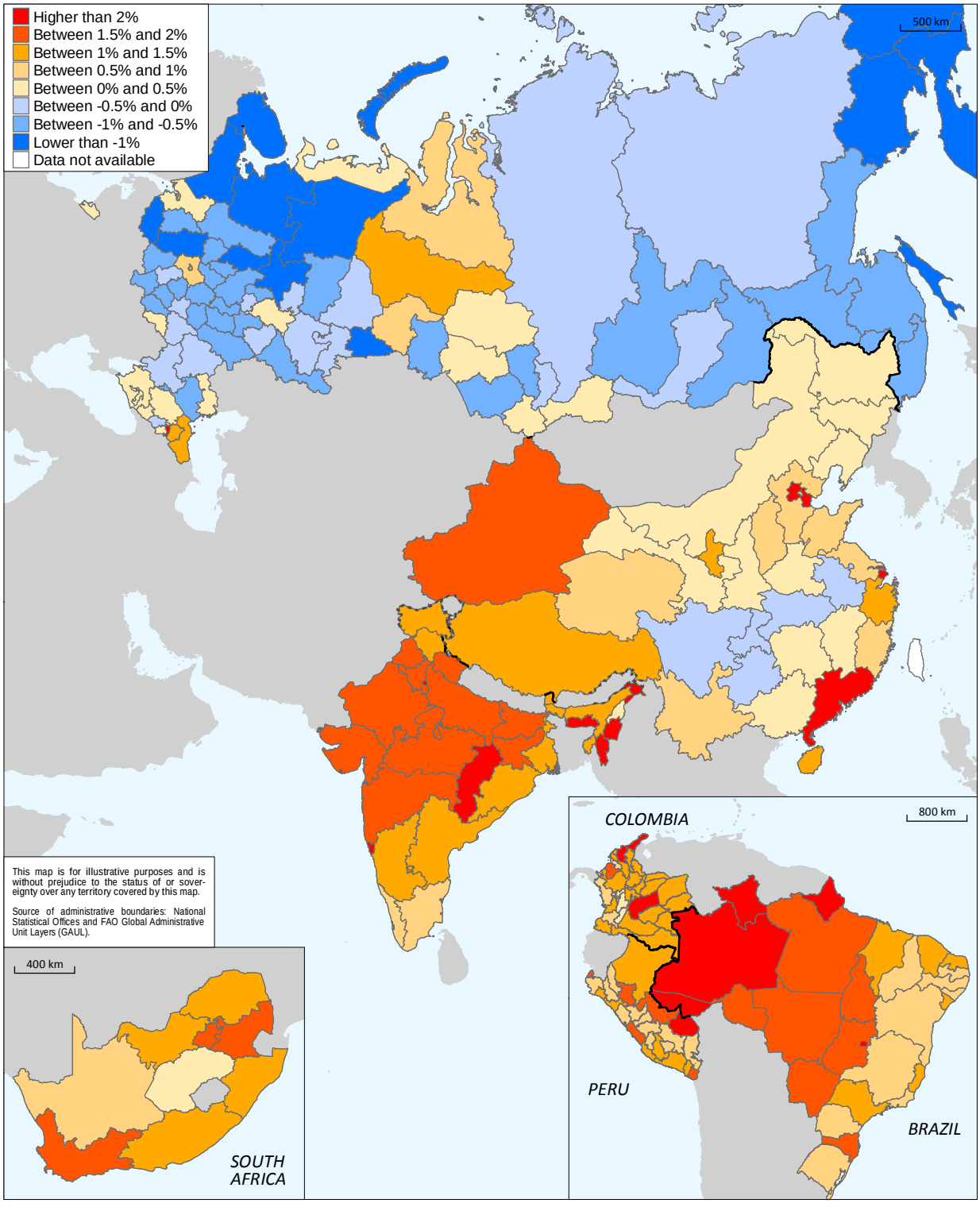
Average annual growth rate, TL3 regions



StatLink http://dx.doi.org/10.1787/888933817428

3.6. Regional population growth: Emerging economies, 2000-17

Average annual growth rate, TL3 regions



StatLink http://dx.doi.org/10.1787/888933817447

Elderly dependency ratios in regions

With as many as three elderly persons for every 10 working-age persons, rural regions face more challenges than other places in ensuring the welfare of their senior citizens.

Ageing can have a major impact on the labour market and on the financing of certain pension systems (e.g. pay-as-you-go pension plans), as well as on the expenditure for health services for the elderly. In OECD countries, the elderly population represents 16.7% of the total population (Figure 3.7). Nevertheless, larger concentrations of the elderly can be observed in small and less urbanised regions (i.e. TL3 regions with predominantly rural population). For example, in 33 TL3 regions – Japan (19), Canada (8), Germany (2), Belgium (1), Greece (1), Spain (1), and the United States (1) – the elderly population is greater than 30%; of these regions, 20 are classified as predominantly rural and 13 as intermediate. Large disparities within countries are also observed in Canada, France, the United Kingdom, Mexico, Spain, Australia, Greece and the United States. In these countries, the difference between the region with the highest and the lowest share of elderly population is above 20 percentage points.

The elderly dependency rate gives an indication of the pressure on the typically economically-active population (15-64 years old) from the typically retired population (65 years old and over). In 2016, the elderly population represented one fourth of the total working-age population across OECD regions. On average, elderly dependency rates are around 31% in predominantly rural regions, 6 percentage points higher than in urban regions. In the rural areas of Japan, Spain and the Netherlands, elderly dependency rates are above 40%; whereas in the rural areas of Mexico, Turkey and Chile they are below 20% (Figure 3.8).

Compared to other types of regions, regions with predominantly rural population have been facing higher increases in the elderly dependency rates in the last 17 years. On average, from 2000 to 2017, elderly dependency rates have increased by 6 percentage points in the OECD. The highest growth has been observed in predominantly rural regions (7 percentage points), while the lowest is reported in predominantly urban regions (5 percentage points) (Figure 3.8). This trend might challenge the provision of services in the most rapidly ageing regions.

Definition

The elderly population is the population aged 65 years and over; while the elderly dependency rate is defined as the ratio between the elderly population and the working age population (15-64 years).

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2000-2017; TL3.

Further information

Territorial grids and regional typology (Annex A).

Eurostat (2013), *Urban-Rural typology*, *http://ec.europa.eu/eurostat/web/rural-development/methodology*.

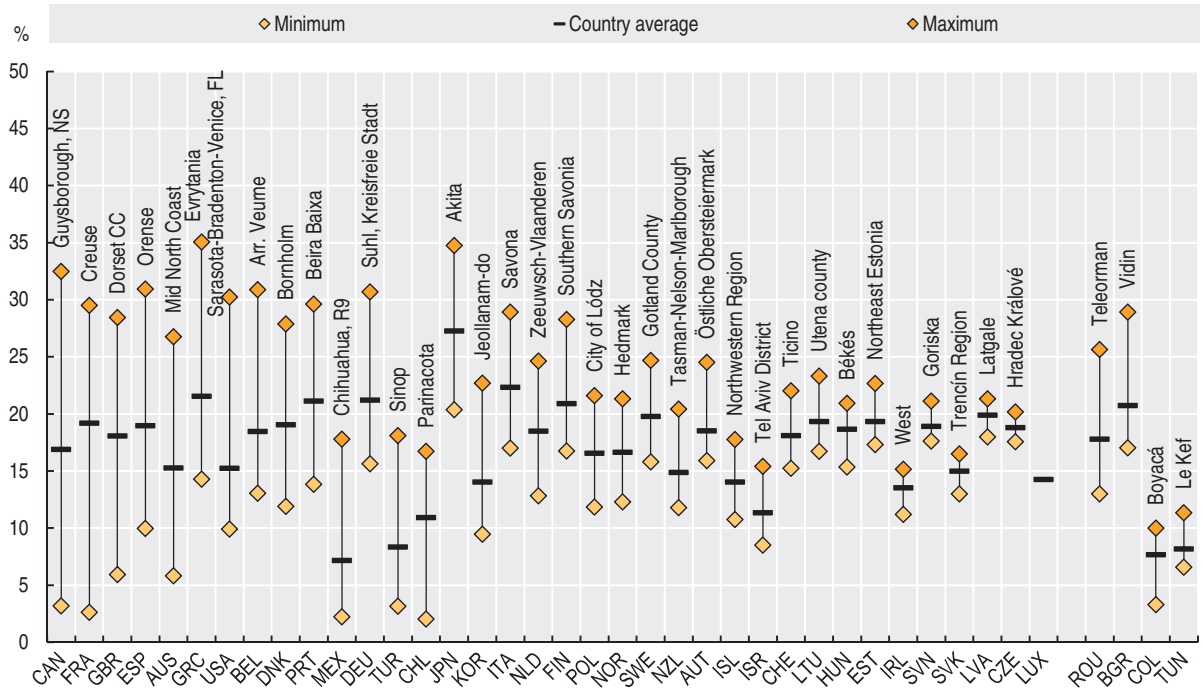
Figure notes

3.7: 2016 was the latest available year for Australia, the United States, Japan, New Zealand, Colombia, and Tunisia; 2015 for Russia; 2014 for China, Brazil, Peru, and South Africa.

3.8: First available year was 2001 for Japan, Australia; 2002 for Chile, and Romania; 2003 for the Netherlands; and 2008 for Turkey. Last available year was 2016 for Japan, Australia, New Zealand, and the United States.

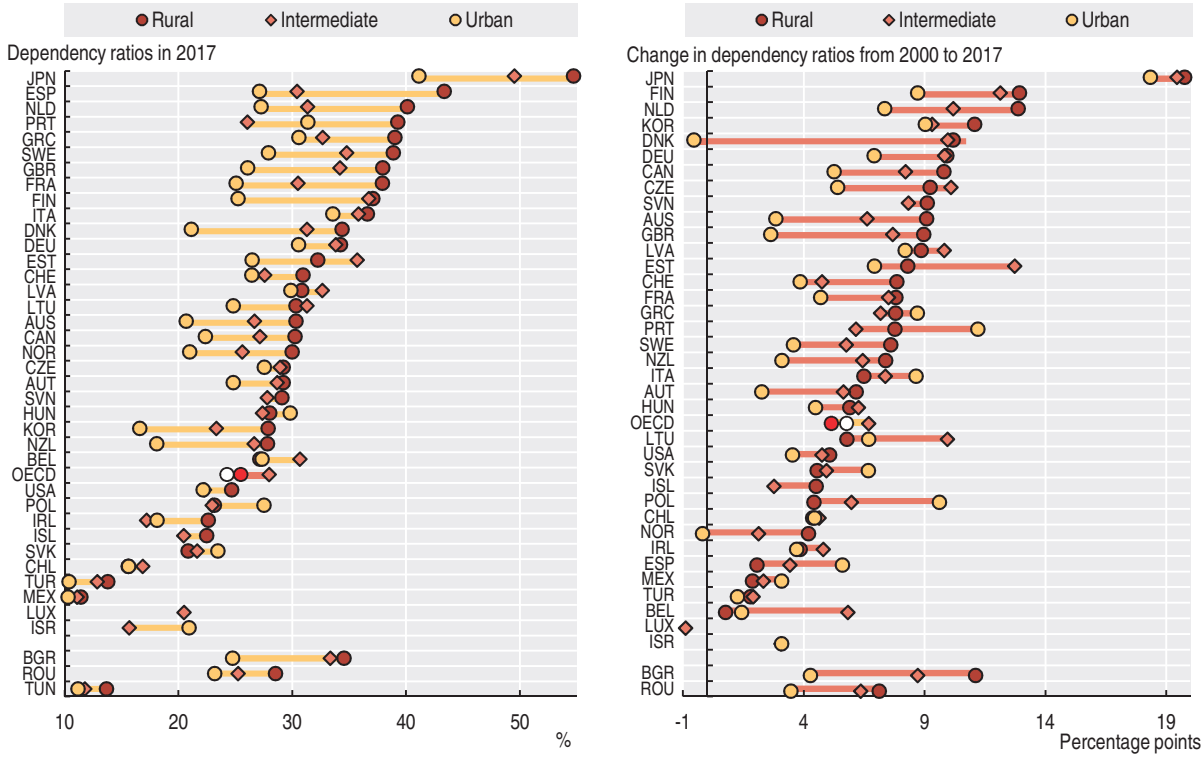
3.7. Regional differences in the share of elderly population

Small regions (TL3), 2017



StatLink http://dx.doi.org/10.1787/888933817466

3.8. Elderly dependency ratios by type of region, and their evolution from 2000 to 2017



StatLink http://dx.doi.org/10.1787/888933817485

Population mobility among regions

Urban regions continue to be very attractive for people, especially youth, accounting for almost 80% of in-country youth migration over the last three years.

The way people move within their countries has important implications for both demographic structure and labour market outcomes. The long-term trend of increasing urban population, which has been characterising most OECD countries, has been continuing also in the most recent years. In the 32 observed OECD countries, 21.5 million people changed their region of residence each year, during the period 2014-2016. This movement corresponded to 2% of the total population in the OECD area, ranging from around 5% of total population in Hungary and Korea to less than 0.5% in the Slovak Republic (Figure 3.9).

Regional migration does not affect all regions of a country in the same way. Sejong (a newly created and promoted administrative district of Korea), Gümüshane (Turkey) and Phocis (Greece) were the TL3 regions with the highest positive net migration rate, 21%, 2.6% and 2.5% of the regional population, respectively. In contrast, Kars (Turkey), Central Athens (Greece) and the Northern Rockies, British Columbia (Canada) were among the TL3 regions with the highest net out-migration rates (Figure 3.10).

Definition

Data refer to yearly flows of population from one TL3 region to another TL3 region of the same country (regional migration). Outflows are represented as the number of persons who left the region the previous year to reside in another region of the country, while inflows are represented as the number of new residents in the region coming from another region of the country.

The net migration flow is defined as the difference between inflows and outflows in a region. A negative net migration flow means that more people left the region than entered it.

Young migrants are those aged between 15 and 29 years old.

In the 28 OECD countries for which data are available, regions with predominantly urban population experienced, from 2013 to 2016, an average net in-migration flow of seven people per every 10 000 inhabitants. In contrast, intermediate and rural regions faced net out-migration flows of two and 11 persons, respectively, per every 10 000 people (Figure 3.11).

Youth mobility represents, on average, 6% of the total within-country migration and occurs mainly from rural to urban regions, where young people (aged from 15 to 29 years old) seek educational and professional opportunities. In Latvia, Estonia, Japan Israel, Korea, Spain, Sweden, Slovak Republic, Australia, United Kingdom, Czech Republic and Norway, more than 90% of young migrants move to regions with predominantly urban population (Figure 3.12).

Source

OECD (2018), OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2013-2016; TL3.

Data for Chile, France and Ireland are not available at regional level.

Further information

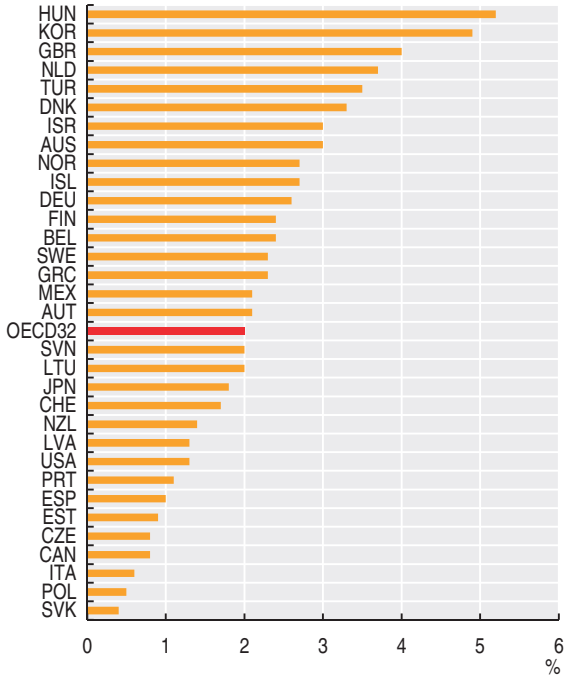
Territorial grids and regional typology (Annex A)

Figure notes

3.9-3.12: Available years: Germany, Latvia and United Kingdom 2012-2015; Italy, 2011-2013; Greece 2012; Slovenia and United States, 2009-2011; Netherlands 2008-2010.

3.9. Annual inter-regional population mobility

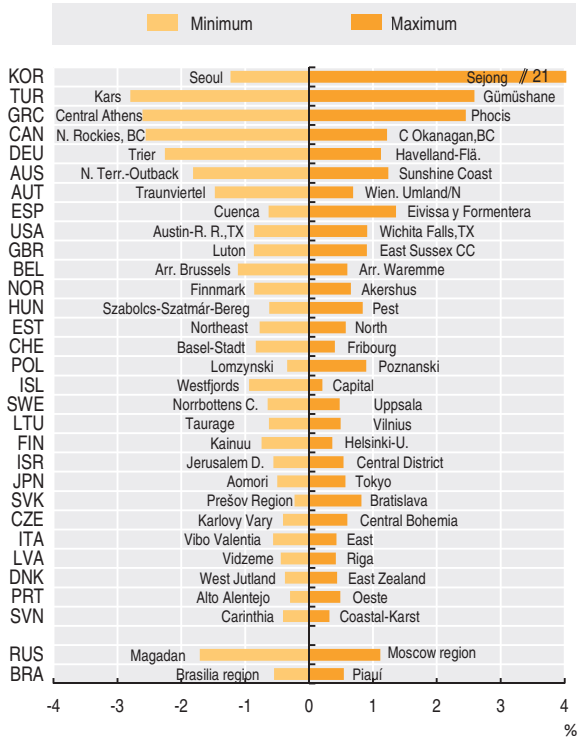
Flows across TL3 regions, % of total population; average 2013-2016



StatLink http://dx.doi.org/10.1787/888933817504

3.10. Population flows across small regions (TL3).

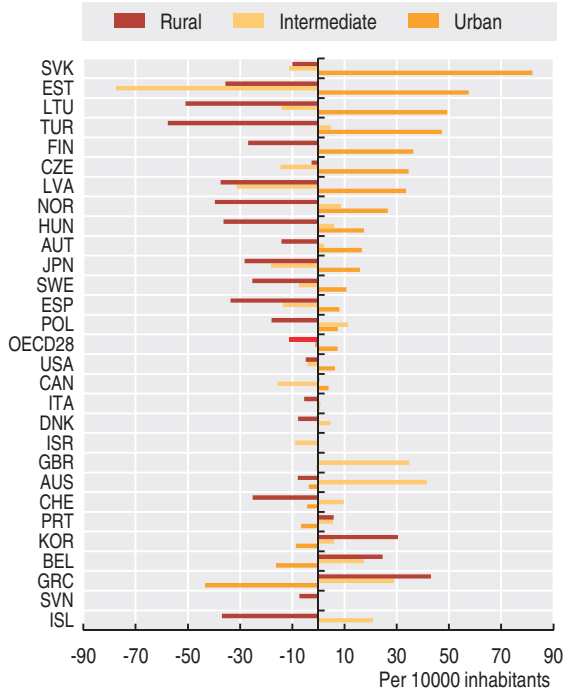
Net flows across TL3 regions, % of total population; average 2013-2016



StatLink http://dx.doi.org/10.1787/888933817523

3.11. Annual regional population flows by type of region

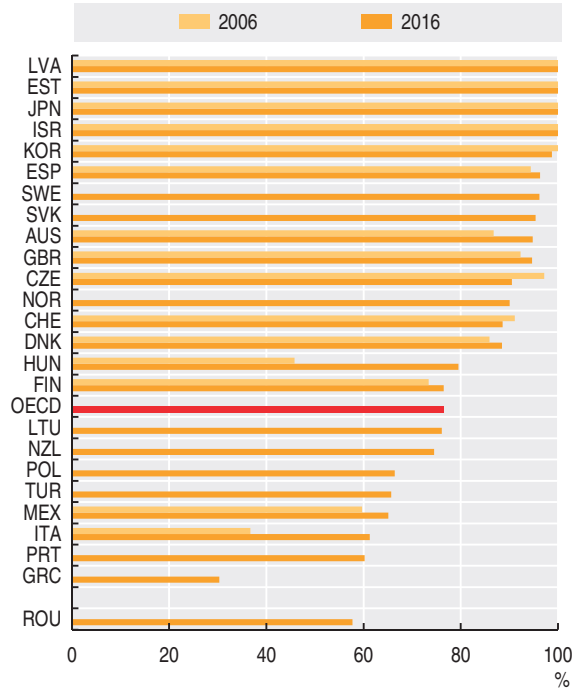
Net flows across TL3 regions per 10 000 population; average 2013-2016



StatLink http://dx.doi.org/10.1787/888933817542

3.12. Young migrants in urban regions as a % of young migrants in the country

Positive net population flows of youth (15 to 29 years old) across TL3 regions; 2006 and 2016



StatLink http://dx.doi.org/10.1787/888933817561

Regional foreign-born population and changes over time

In the OECD, two-thirds of the foreign-born population live in regions with large agglomerations, six percentage points more than the native-born population.

Across OECD regions, around 10% of the total population is foreign-born. Capital regions (i.e., the regions where the capital cities are located) record the highest shares of migrants in the majority of OECD countries (in 14 out of 24 countries) (Figure 3.13).

The foreign-born population is more concentrated than the native-born population. Close to two-thirds of the foreign-born population live in "mostly agglomerated" regions (see Definition below) across the OECD, 6 percentage points more than the average of the native-born population (58%). In 24 out of the 26 countries covered (with the exception of the Slovak Republic and Slovenia), at least half of the total migrant population live in mostly agglomerated regions (Figure 3.14).

Large disparities are also observed in the regional distribution of migrants across OECD countries. For example, with similar overall shares of foreign-born in total country population (around 14%), the United States, Belgium, and the United Kingdom display close to twice the variation in their regional distribution of migrants than Spain, France, and Norway. In Australia, Switzerland and Ireland, the share of migrants is above 12% in all regions; while in the Slovak Republic, Hungary, and Poland, the share of foreign-born population is less than 3% in all regions (Figure 3.13. and Figure 3.15).

While for OECD countries the change in the presence of migrants from 2005 to 2015 has been, on average, relatively low (around 2 percentage points), it differed significantly across OECD large regions (TL2). For example, in Hedmark and Oppland (Norway), Corsica (France) and Tasmania (Australia) the presence of migrants has dropped by more than 6.5 percentage points; whereas, in Greater London (United Kingdom), Bremen (Germany), Oslo and Akershus (Norway), California (United States), and Brussels (Belgium), the share of foreign-born has increased by more than 7 percentage points (Figure 3.16). Across European regions, on average, the composition of the foreign-born population by place of origin is very well balanced; with 40% of total migrants being natives of other European countries.

Definition

Migrants are defined by place of birth. The foreign-born or migrant population is defined as the population born in a country different from the one of residence. Unlike citizenship, this criterion does not change over time, it is not subject to country differences in legislation and it is thus adequate for international comparisons. As such, the terms "foreign-born" and "migrants" will be used interchangeably in the following sections.

TL2 regions are classified into two types: i) "mostly agglomerated"; and ii) "non-agglomerated". The methodology employed in building this classification is mainly based on the share of regional population living in functional urban areas (FUAs). A FUA usually encompasses a cluster of contiguous municipalities that have a high-density core and a functionally connected commuting zone (OECD, 2012). A TL2 region is classified as mostly agglomerated if the share of the regional population living in FUAs is above 70% or if part of the regional population lives in a metropolitan area with more than 1.5 million inhabitants. In all other cases, regions are classified as non- agglomerated.

Source

OECD (2018), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2005 and 2015; 2014-2015 (two-year average) for Europe and US; TL2, except for Austria, where data is only available at the NUTS1 level.

Further information

Territorial grids and regional typology (Annex A)

Diaz Ramirez, M., et al. (2018), "The integration of migrants in OECD regions: A first assessment", *OECD Regional Development Working Papers*, No. 2018/01, OECD Publishing, Paris. *http://dx.doi.org/10.1787/fb089d9a-en*

OECD (2012), Redefining "Urban": A New Way to Measure Metropolitan Areas, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264174108-en*.

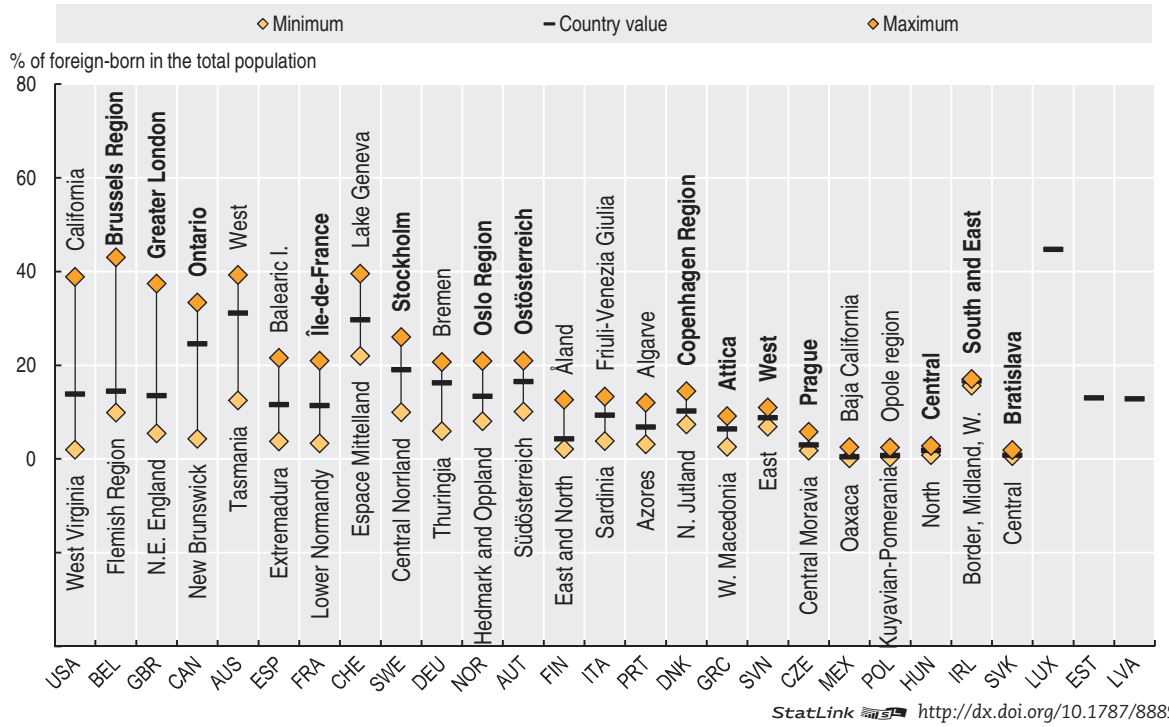
Figure notes

3.13: The shares of foreign-born refer to the population 15 years old or older. Capital regions are highlighted in bold in the figure.

3.14: Panel A: Percentage of respective place-of-birth population. Panel B: Difference between the percentage in 2014-2015 (two-year average) and the one in 2005.

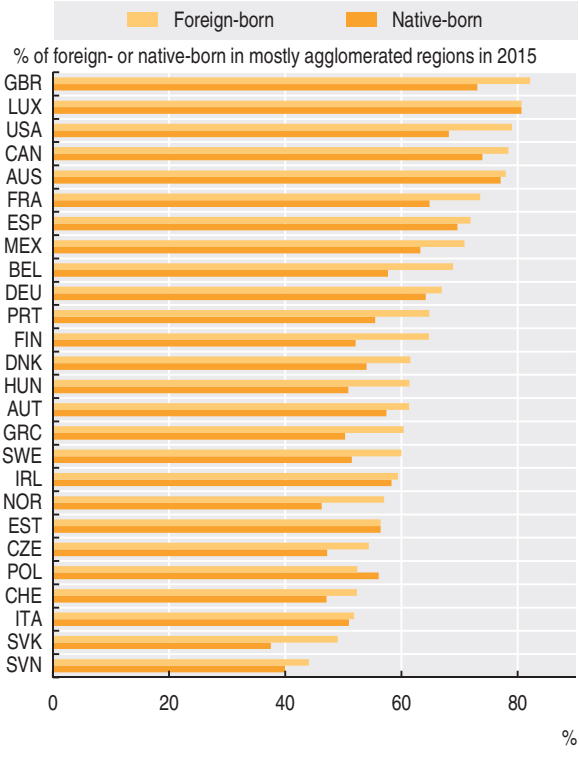
3.13. Regional disparities in the presence of foreign-born

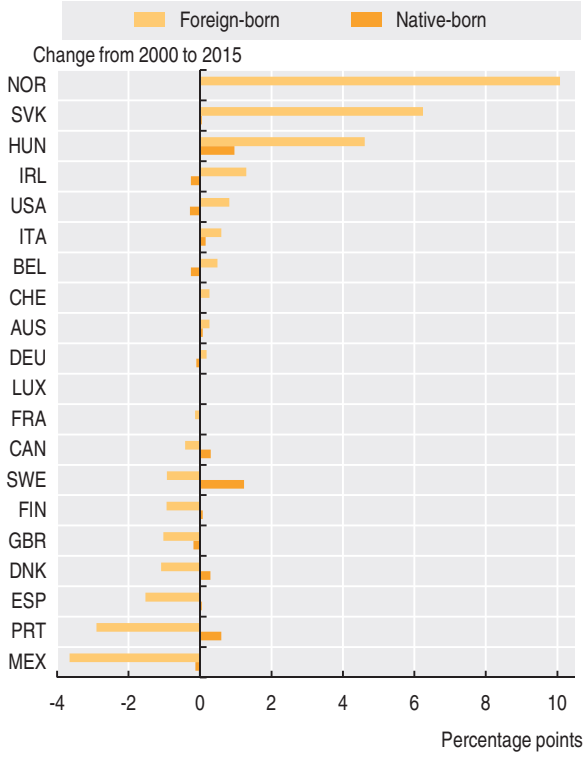
Large regions (TL2), two-year average (2014-15)



StatLink http://dx.doi.org/10.1787/888933817580

3.14. % of foreign- and native-born population in mostly agglomerated regions (TL2)

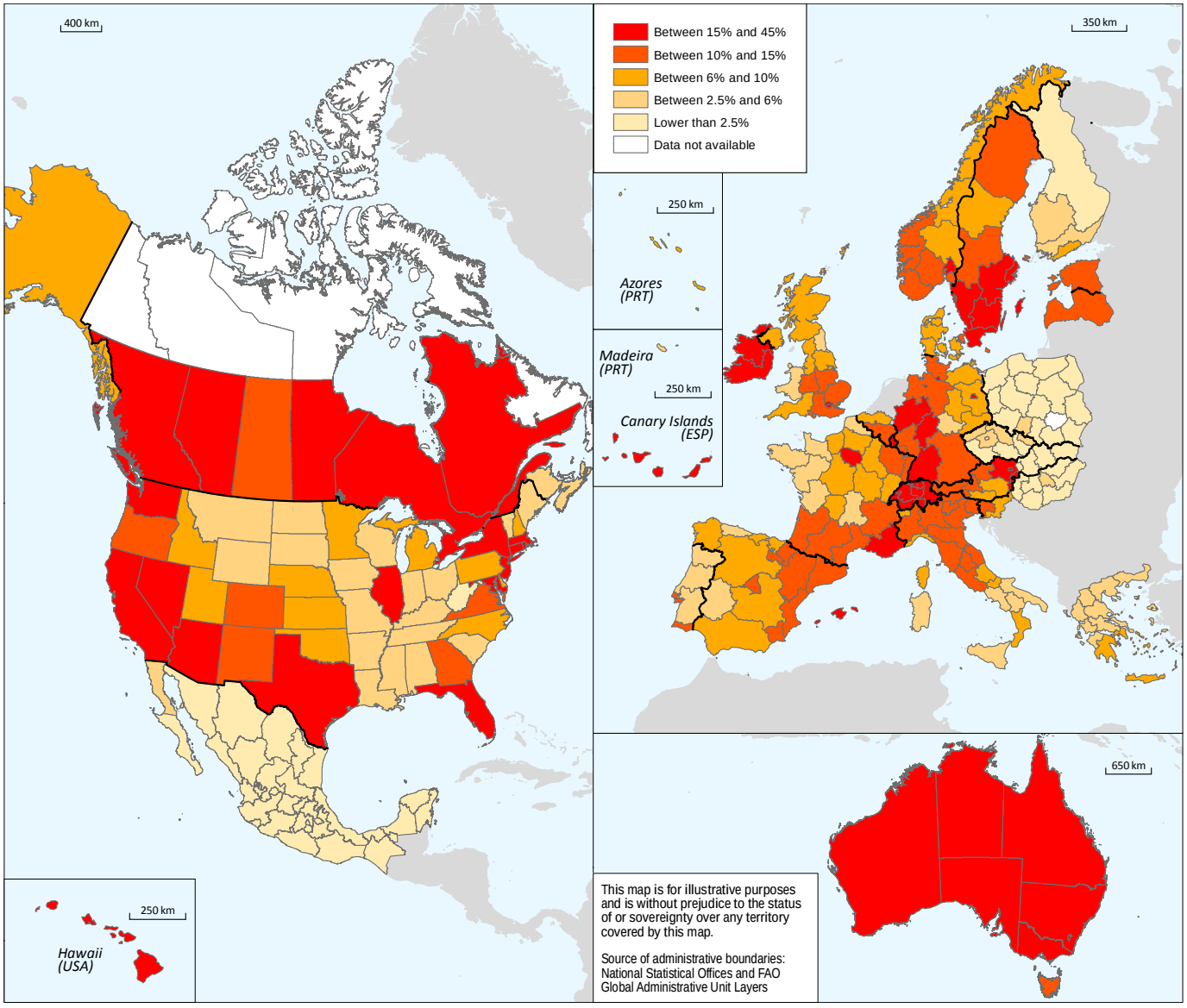




StatLink http://dx.doi.org/10.1787/888933817599

3.15. Presence of foreign-born in TL2 regions, 2015

% of total population

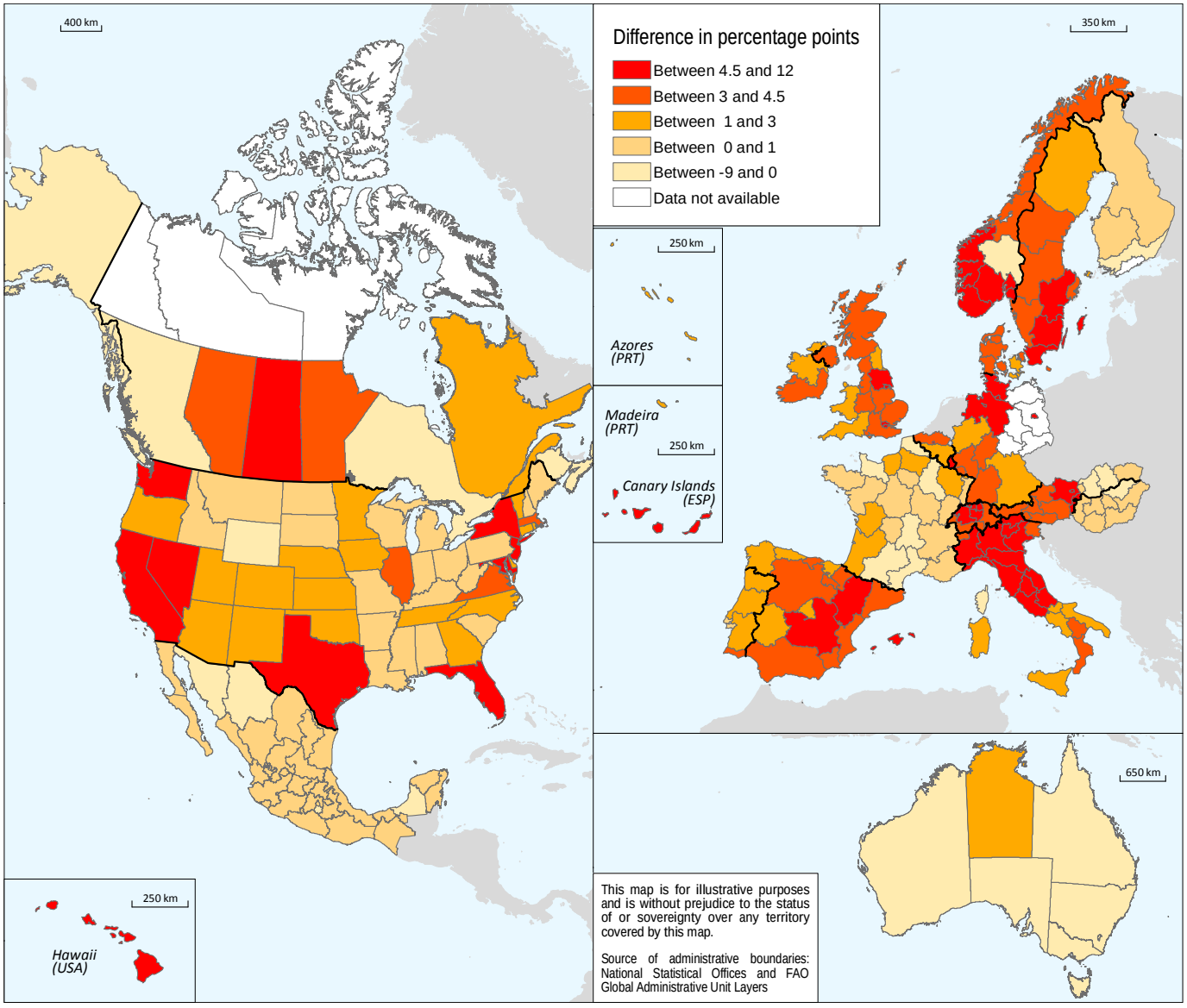


Note: Intervals correspond to quintiles.

StatLink http://dx.doi.org/10.1787/888933817618

3.16. Change in the presence of foreign-born in TL2 regions from 2005 to 2015

Difference between the share of foreign-born in 2015 and the share of foreign-born in 2005



Note: Intervals correspond to quintiles.

StatLink http://dx.doi.org/10.1787/888933817637

Foreign-born population by age and dependency ratios in regions

With larger proportions of people in their early working age, migration is mitigating the ageing of population in most regions.

In a context of ageing societies in many OECD countries, migration often provides a source of working-age population. Across OECD regions, the share of foreign-born population of primary working age – between 14 and 54 years old – tends to be larger than its native-born counterpart. Figure 3.17 shows that migrants are overrepresented compared with the native-born in this age-group in practically all regions, with exceptions in Germany (Thuringia, Mecklenburg-Vorpommern, Saxony-Anhalt, Brandenburg, and Saxony), Czech Republic (Moravia-Silesia), France (Midi-Pyrénées) and Canada (Nova Scotia). In eight out of the twenty countries covered, this positive difference is of at least 15 percentage points. However, in Germany, Czech Republic, and France, regions with high proportions of primary working age population among migrants coexist with regions where the same proportion is higher among native born.

The elderly population rate for the native-born is higher than that for the foreign-born in 70% of the regions covered in Figure 3.17. What is more, in all regions of Finland, Portugal, Italy, Denmark, Norway, Ireland, Spain, Sweden, and Austria the shares of elderly native-born population are always higher than those displayed by the foreign-born. Nevertheless, this reality is not homogeneous across regions; for instance, in more than one-third of the regions of Slovak Republic, Germany and Czech Republic, the difference between the shares of elderly foreign- and native-born population is above 10 percentage points.

Dependency ratios provide a rough indication of the potential pressure on the regional transfer systems due to the share of the economically dependent population, i.e. mostly children (14 years old or less) and the elderly (65 years old or over). When looking at this indicator by place of origin, regional dependency ratios of the native-born appear to be higher than those of the foreign-born for 93% of the regions covered. In all countries except Germany, Estonia, Hungary, the Slovak Republic, Czech Republic, the United States, and Switzerland, regional dependency ratios of the native-born are higher than those of the foreign-born. Nonetheless, within-country disparities in dependency ratios are higher for the foreign-born than for their native counterparts. While the elderly dependency ratio for the foreign-born differs on average by 12 percentage points within OECD countries, for the native born this difference is on average 5 percentage points (Figure 3.18).

Definition

The terms "foreign-born" and "migrants" are used interchangeably. Migrants are defined by place of birth. The foreign-born or migrant population is defined as the population born in a country different from the one of residence. Unlike citizenship, this criterion does not change over time, it is not subject to country differences in legislation and it is thus adequate for international comparisons.

The primary working-age population refers to the 25-54 year old population, while the elderly population refers to the population aged 65 years and over. The dependency ratio is defined as the ratio between the elderly (65 years old and over) and the young population (14 years old or younger) over the whole population.

Source

OECD (2018), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2015; 2014-2015 (two-year average) for European countries and US; TL2, except for Austria, where data is only available at the NUTS1 level.

Further information

Territorial grids and regional typology (Annex A)

Diaz Ramirez, M., et al. (2018), "The integration of migrants in OECD regions: A first assessment", *OECD Regional Development Working Papers*, No. 2018/01, OECD Publishing, Paris, *http://dx.doi.org/10.1787/fb089d9a-en*.

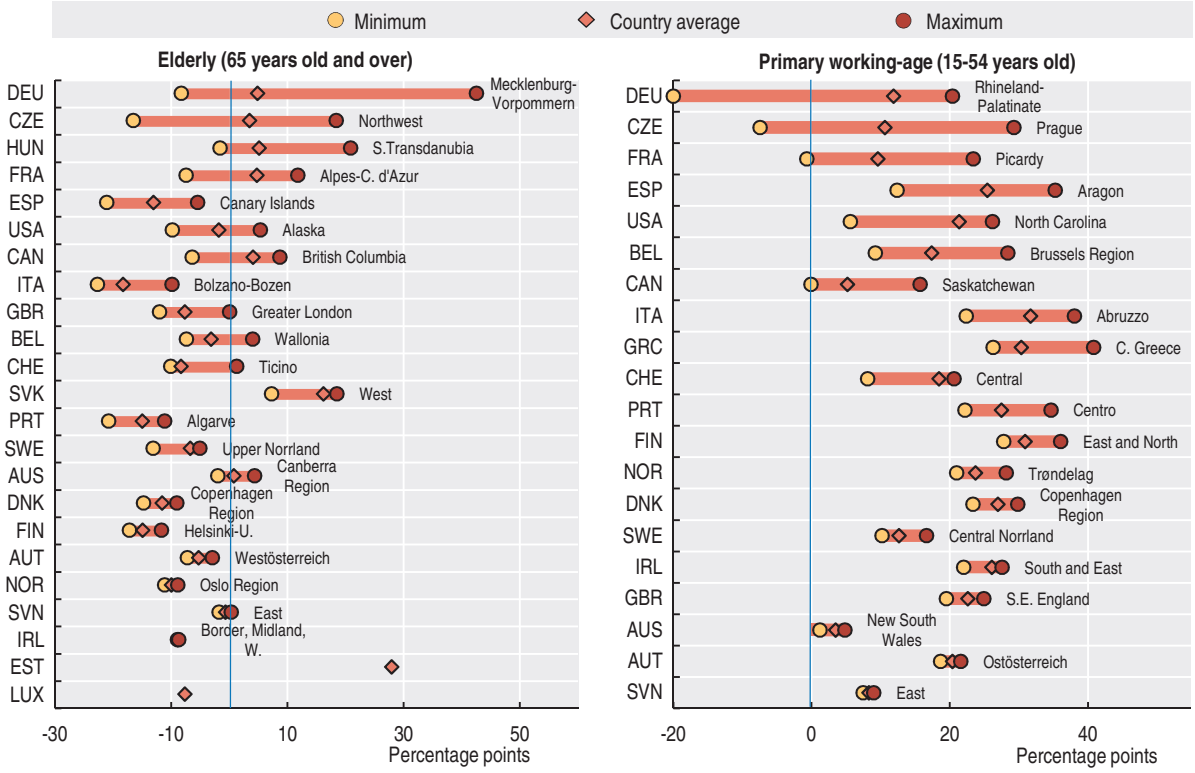
Figure notes

3.17: Percentage of respective place-of-birth population. Differences between foreign- and native-born.

3.18: Percentage of respective place-of-birth working-age population.

3.17. Elderly and very active foreign-born population, relative to native-born

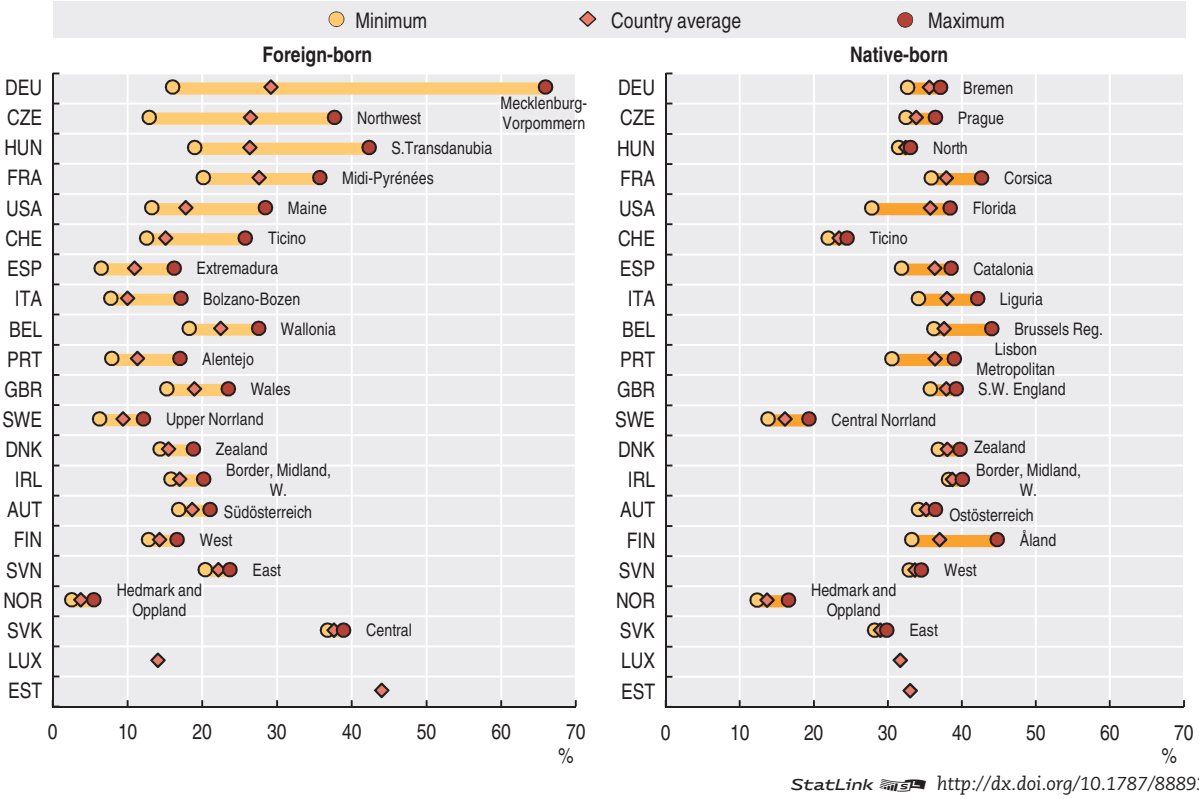
Difference between the shares of foreign- and native-born by age; TL2, 2015



StatLink http://dx.doi.org/10.1787/888933817656

3.18. Dependency ratios of the foreign- and native-born population

Large regions (TL2), 2015



StatLink http://dx.doi.org/10.1787/888933817675

The integration of migrants across regions: Education outcomes

Tertiary educated migrants tend to concentrate in large agglomerations, with the largest proportion in capital regions.

The location of the most educated migrants tends to reflect that of their native born peers. Regions tend to have similar shares of highly-educated migrants and natives across the OECD area. Higher shares of highly-educated foreign-born are found in regions with relatively larger shares of native-born with tertiary education (Figure 3.19). This pattern is observed to a much lesser extent for the regions with the lowest shares of highly educated people (Figure 3.20).

Among the countries covered, 12 capital regions gather the highest share of both highly-educated foreign-born and native-born in their respective country. In the capital regions of Mexico, Australia, the United States, and Ireland, the share of highly-educated migrants represents more than 50% of the regional foreign-born population. In contrast, in all regions of Slovenia, Italy and Greece, less than 20% of the foreign-born population have tertiary education (Figure 3.20).

Regions attracting the highest share of highly educated migrants are mostly located in Canada, Australia, Northern Europe and Switzerland. In Canada, Australia, the United Kingdom, Ireland, Switzerland and the Nordic countries, all regions display a minimum level of 25% of foreign-born with a tertiary education degree (Figure 3.21).

Definition

The terms "foreign-born" and "migrants" are used interchangeably. Migrants are defined by place of birth. The foreign-born or migrant population is defined as the population born in a country different from the one of residence. Unlike citizenship, this criterion does not change over time, it is not subject to country differences in legislation and it is thus adequate for international comparisons.

Tertiary education includes both university qualifications and advanced professional programmes (ISCED 5 and 6).

Some places are particularly attractive for highly educated migrants. In the United Kingdom, Ireland, Norway and Sweden, most regions display larger shares of highly-educated among the foreign-born than among the native-born population (Figure 3.22). In all regions of Australia and most regions of Canada, the share of foreign-born with tertiary education is higher than that of natives by at least 10 percentage points. In Spain, Greece and Italy, the opposite trend is observed where most regions display higher shares of highly-educated native-born than shares of highly-educated migrants.

Source

OECD (2018), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2015; 2014-2015 (two-year average) for European countries and US; TL2.

Further information

Territorial grids and regional typology (Annex A)

Diaz Ramirez, M., et al. (2018), "The integration of migrants in OECD regions: A first assessment", *OECD Regional Development Working Papers*, No. 2018/01, OECD Publishing, Paris, *http://dx.doi.org/10.1787/fb089d9a-en*.

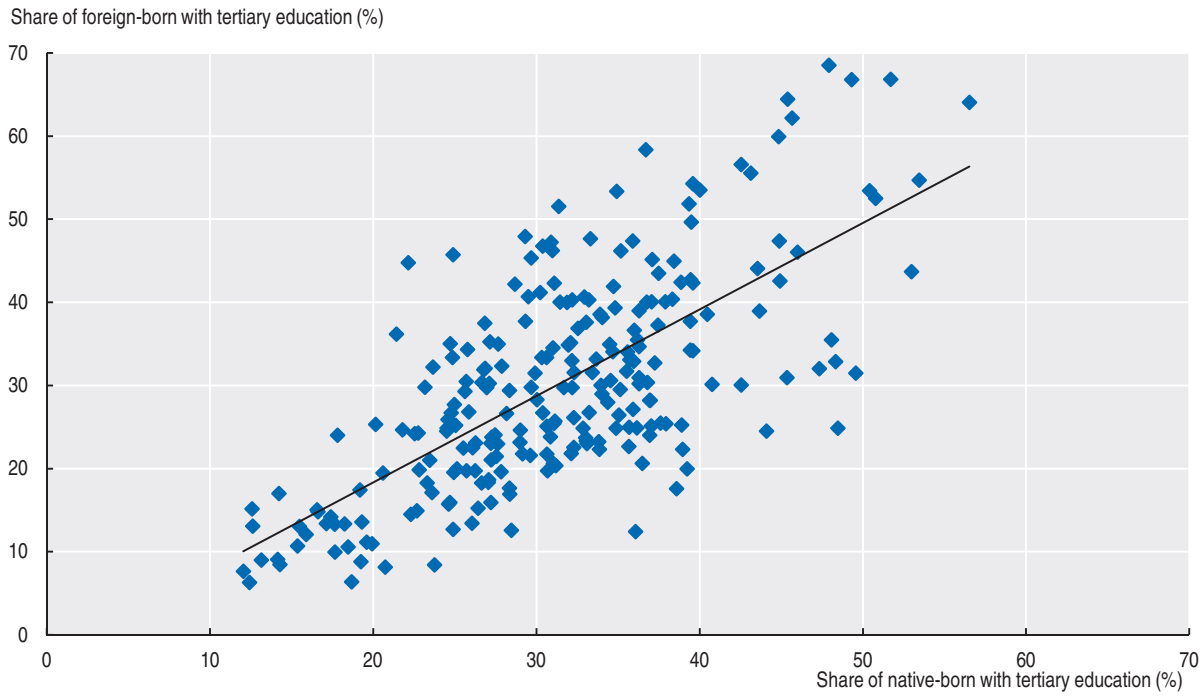
Figure notes

3.19-3.22: Percent in respective working-age (15-64 years old) population.

3.22: Difference between the shares of foreign- and native-born with tertiary education.

3.19. Share of foreign-born with tertiary education vs. share of highly-educated natives

Large regions (TL2), 2014-15 (two-year average)

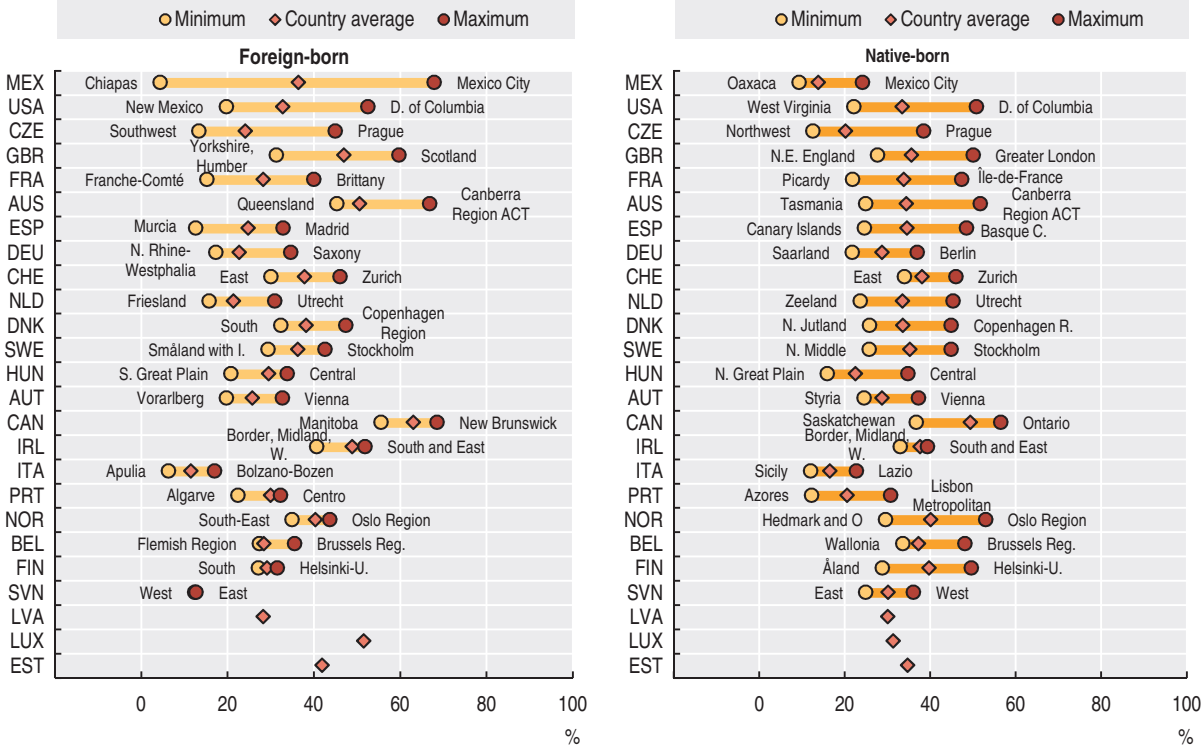


Note: Correlation = 0.7.

StatLink http://dx.doi.org/10.1787/888933817694

3.20. Regional disparities in the presence of foreign- and native-born with tertiary education

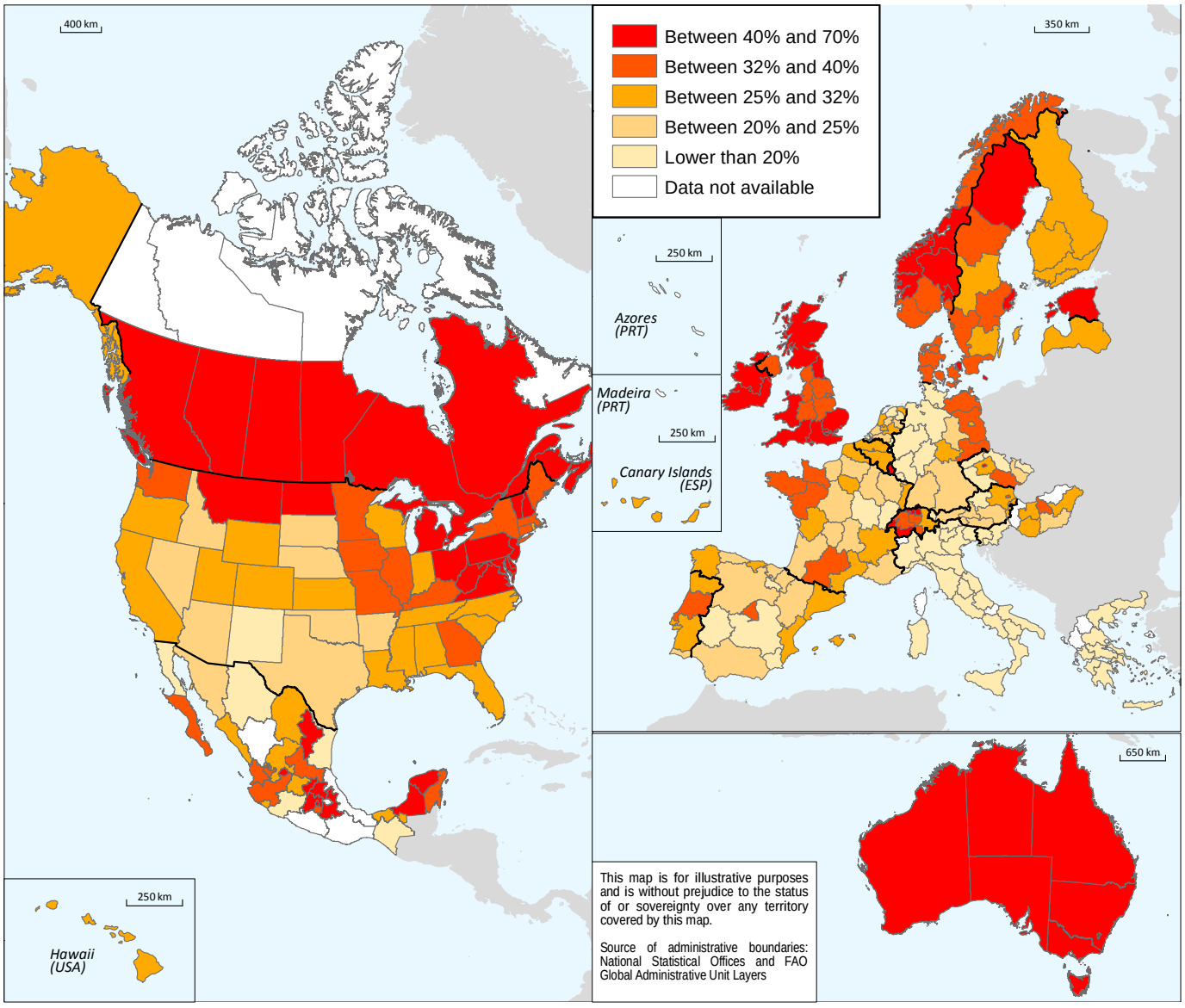
Large regions (TL2), 2014-15 (two-year average)



StatLink http://dx.doi.org/10.1787/888933817713

3.21. Proportion of 15-64 years old foreign-born with tertiary education

As a % of 15-64 years old foreign-born population, large regions (TL2), 2014-15

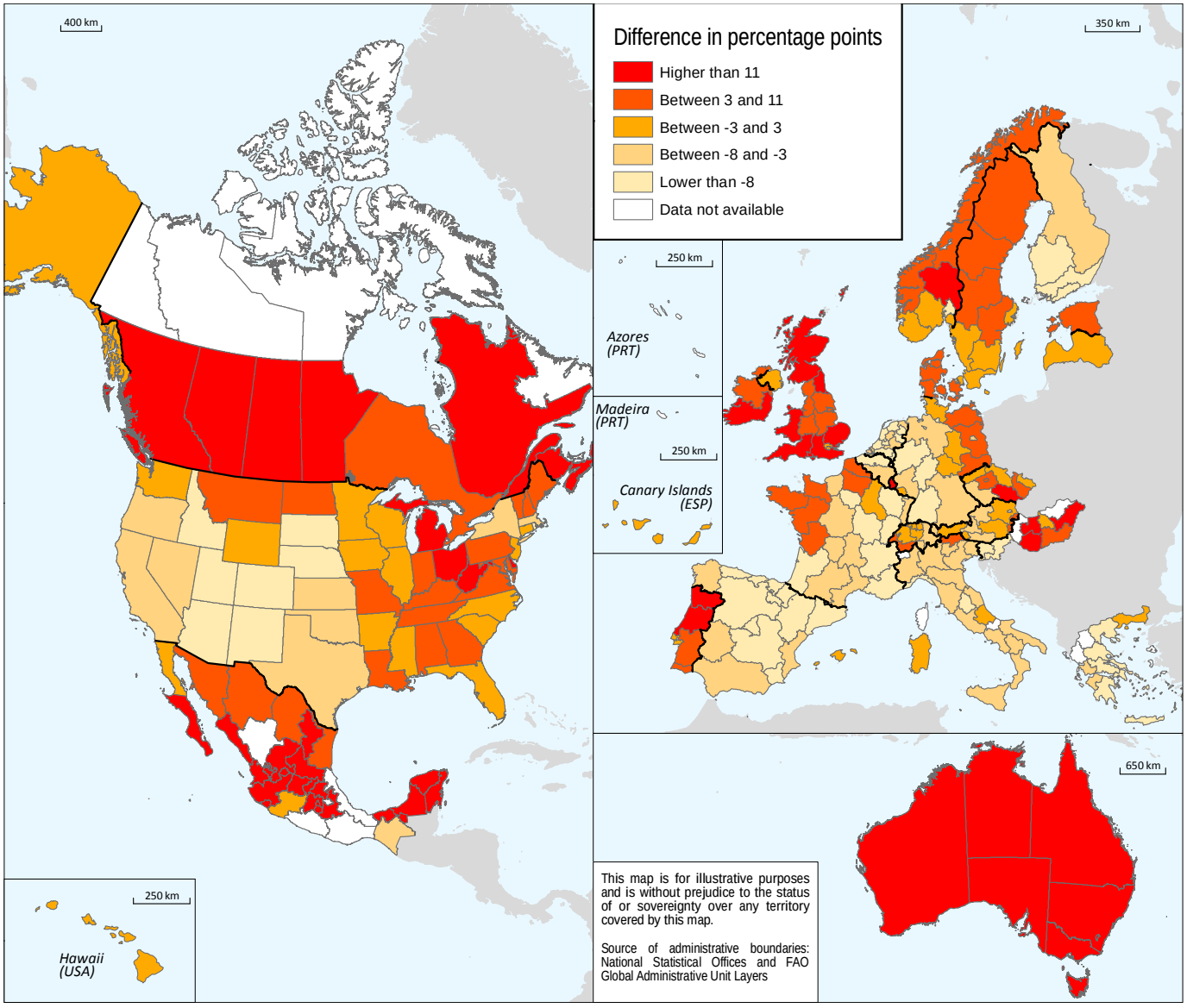


Note: Intervals correspond to quintiles.

StatLink http://dx.doi.org/10.1787/888933817732

3.22. Difference in tertiary education between foreign- and native-born

%-points difference of 15-64 years old population shares with tertiary education, TL2, 2014-15



Note: Intervals correspond to quintiles.

StatLink http://dx.doi.org/10.1787/888933817751

The integration of migrants across regions: Labour market outcomes

Unemployment rates tend to be higher among the foreign-born than among the native-born population, although this gap tends to be smaller in capital regions.

Labour market conditions are at the core of well-being and are a crucial aspect of the integration process of migrants. The unemployment rate of foreign-born people was on average 14% in 2015 across OECD regions, 4.6 percentage points higher than for the native-born (Figure 3.23). In three quarters of the regions, the unemployment rate is higher for foreign- than for native–born persons. Only in Canada, Italy, the United States, Greece, Australia, Portugal, Czech Republic, and Spain, do some regions display better outcomes for migrants than for the native-born.

The challenges faced by migrants in the labour market include the risk to be over-qualified for the job they actually have. The over-qualification rate, calculated as the share of people with tertiary education working in a low- or medium-skilled job, is a recurring issue for migrants, which can be due to the difficulties highly educated migrants face in obtaining official recognition for their academic qualifications. As shown in Figure 3.23, over-qualification rates tend to be higher for the foreign-born than for the native-born population in most countries. On average, such a difference amounted to 3.5 percentage points in 2015. Only in the United States, and Spain, more than three-quarters of their regions present better outcomes for the foreign-born compared to the native-born population. In Europe and Australia, over-qualification rates of migrants are around 4 percentage points higher than those of the population born in the country.

In regions where natives are facing high levels of unemployment, migrants also have relatively high unemployment rates. However, the gap in the unemployment rate between migrants and natives can vary within the country depending on the level of agglomeration of the region. For example, in 15 out of the 21 countries covered, the foreign-born, relative to the native-born, have lower unemployment rates when they are located in the capital region – the unemployment gap between migrants and natives is on average 20% narrower in capital regions than in the rest of the country (Figure 3.24).

Definition

The terms "foreign-born" and "migrants" are used interchangeably. Migrants are defined by place of birth. The foreign-born or migrant population is defined as the population born in a country different from the one of residence. Unlike citizenship, this criterion does not change over time, it is not subject to country differences in legislation and it is thus adequate for international comparisons.

Over-qualification refers to those with a "high" level of education and in low- or medium-skilled jobs (only employed population).

Source

OECD (2018), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2015; 2014-2015 (two-year average) for European countries and US; TL2.

Further information

Territorial grids and regional typology (Annex A)

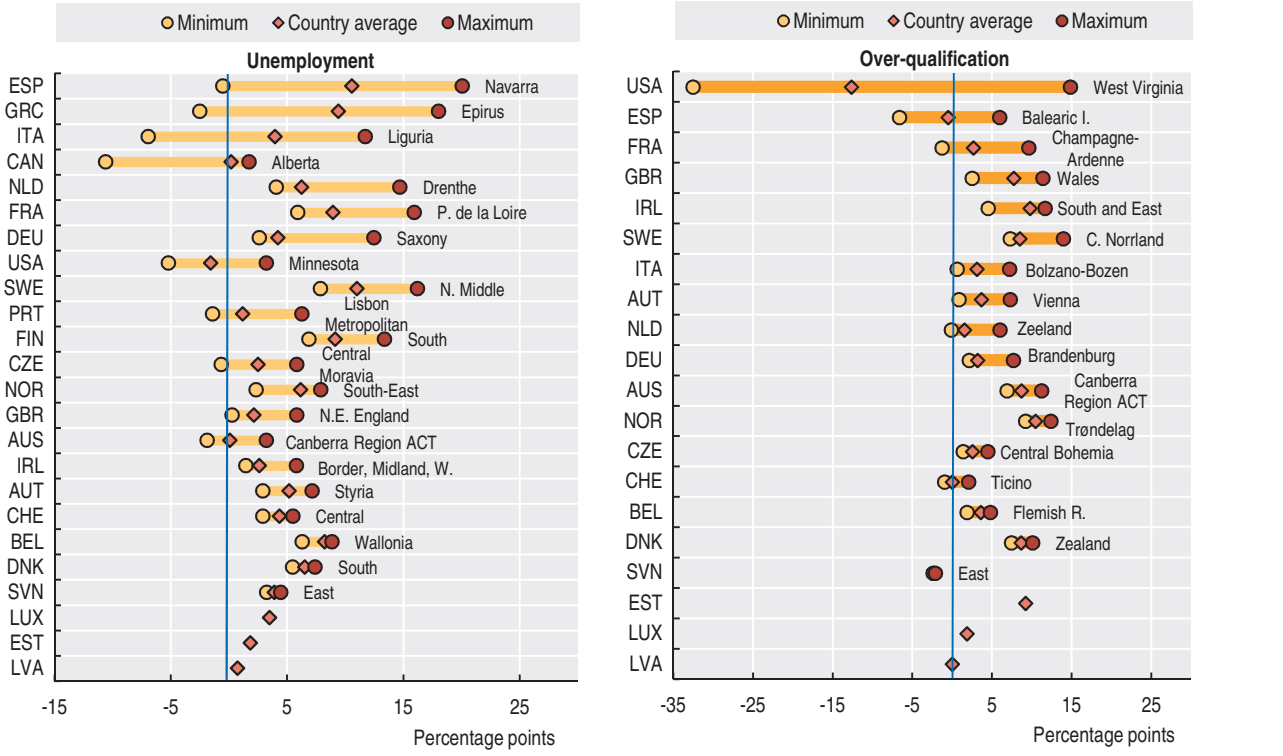
Diaz Ramirez, M., et al. (2018), "The integration of migrants in OECD regions: A first assessment", *OECD Regional Development Working Papers*, No. 2018/01, OECD Publishing, Paris, *http://dx.doi.org/10.1787/fb089d9a-en*.

Figure notes

3.23: Unemployment rate for the 15-64 year old population. Over-qualification rate of the employed 15-64 year old population.

3.23. Unemployment and over-qualification rates of the foreign-born, relative to the native-born

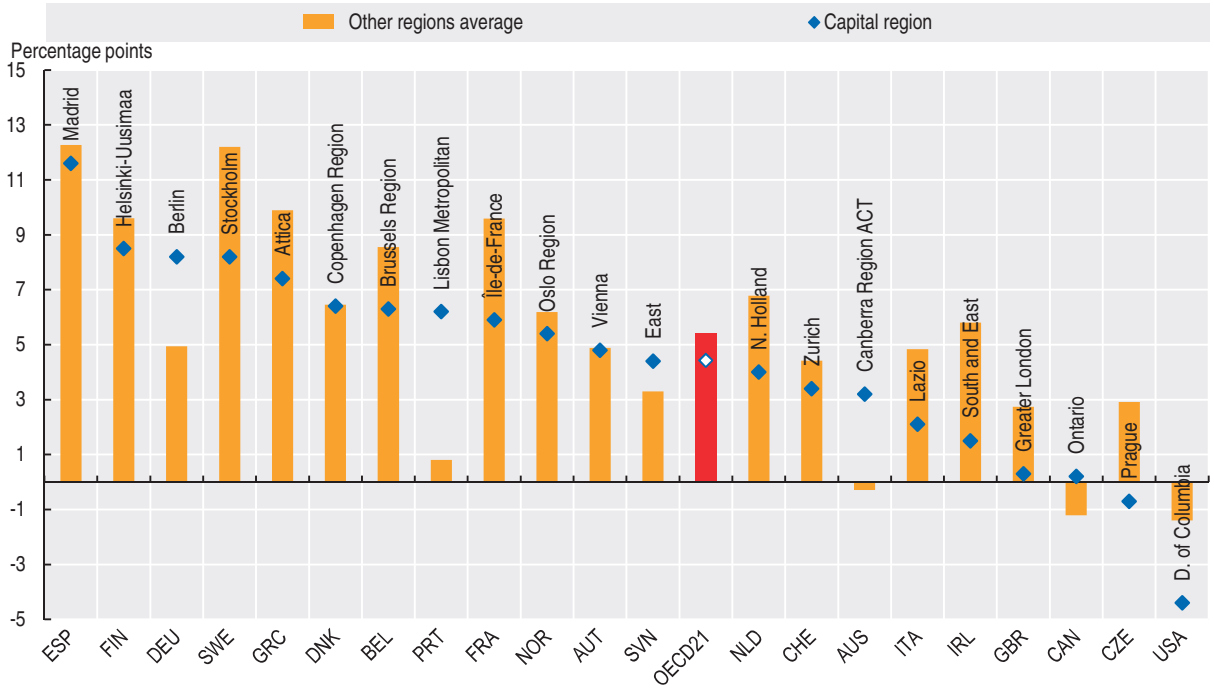
Difference between foreign-born and native-born outcomes, TL2, 2014-15



StatLink http://dx.doi.org/10.1787/888933817770

3.24. Unemployment rates of the foreign-born, relative to the native-born, in capital regions

Difference between foreign-born and native-born outcomes, 2014-15



StatLink http://dx.doi.org/10.1787/888933817789

Gender differences in education and labour market outcomes

Female participation in the labour market is lower than for men, in spite of the fact that the share of highly educated women can be up to 10 percentage points higher in certain regions in Greece, Italy, Poland and Turkey.

Female participation in the labour market has increased in OECD countries over the past decades, the overall rate exceeding 62% in 2017. However, important differences in the access to labour markets for women are still present. Across countries, the gender gap in employment rates is on average 15 percentage points (7 percentage points lower than in 2000). While at the turn of the millennium the gender gap in the employment rate was higher than 20 percentage points in many regions from 15 countries, in 2017 this occurred only in some regions from four countries. However, in 28% of OECD regions, less than half of working age women was employed in 2017, suggesting that services that allow reconciling family and work life, as well as incentives for labour market participation are quite diverse both within and across countries. Regional discrepancies between male and female employment were largest in Mexico, Chile, Turkey, Israel, Italy and the United States, with a more than 15 percentage point difference between the regions with the smallest and highest gender gap. This gender gap can be higher than 30 percentage points in regions in Mexico and Turkey, with extreme values being found in Chiapas and Central Anatolia Western South, respectively (Figure 3.25).

While women's participation in the labour market is still lagging, their educational attainment often exceeds that of men. In 2017, in 27 of the considered countries, the share of females with tertiary education was on average 10 percentage points higher than that of males (Figure 3.26). This difference was higher than 18% in Swietokrzyskie (Poland), Central Norrland (Sweden) and Ankara (Turkey). However, in certain regions, especially in Switzerland and Germany, the proportion of men with tertiary education is significantly higher than that of women (Figure 3.26).

Gender differences are lower for unemployment rates than for employment rates, suggesting that promoting a higher female participation in the labour market is crucial to bridge the existing gap. The gender unemployment gap has decreased by 34% since 2011 in 27 out of 35 countries (Figure 3.27). On average, the gender gap in unemployment rates is 3 percentage points lower in most OECD regions, although there are still several exceptions such as South-eastern Anatolia East (Turkey), Campania (Italy) and West (Greece), with female unemployment rates being 27, 10 and 9 percentage points higher than for men, respectively.

Definition

Employed people are all persons who, during the reference week, worked at least one hour for pay or profit or were temporarily absent from such work. Family workers are included. The female employment rate is calculated as the ratio between female employment and the female working-age population (15 to 64 years).

Unemployed persons are defined as those who are without work, are available for work, and have taken active steps to find work in the last four weeks. The unemployment rate is defined as the ratio between unemployed persons and labour force, where the latter is composed of unemployed and employed persons.

The share of people with tertiary education is defined by the proportion of men and women who have a degree in tertiary education (ISCED 5 to 8) over the population of the respective gender.

Source

OECD (2018), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

From 2000 to 2017; TL2.

Further information

Territorial grids and regional typology (Annex A)

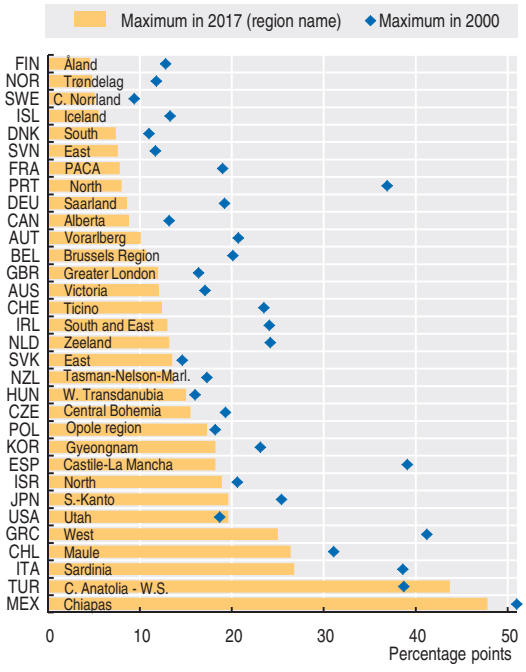
Figure notes

3.26: For the United States, Peru and Tunisia the working-age population corresponds to the population 15 years old and over. First available year is 2004 for Turkey; 2005 for Mexico, and Korea; and 2015 for Chile. Last available year is 2016 for Canada, Australia, New Zealand, Korea, Chile and Mexico; 2015 for Japan; and 2014 for the United States.

3.27: For Australia, Canada, the United States, Peru, and Brazil the labour force population corresponds to the labour force 15 years old and over. Last available year is 2016 for Chile, Iceland, Israel, Korea, Mexico, New Zealand, and Colombia; 2015 for Japan, and Russia; 2014 for the United States, and Peru; and 2013 for Brazil.

3.25. Gender gap in employment rate in the region with the largest gap

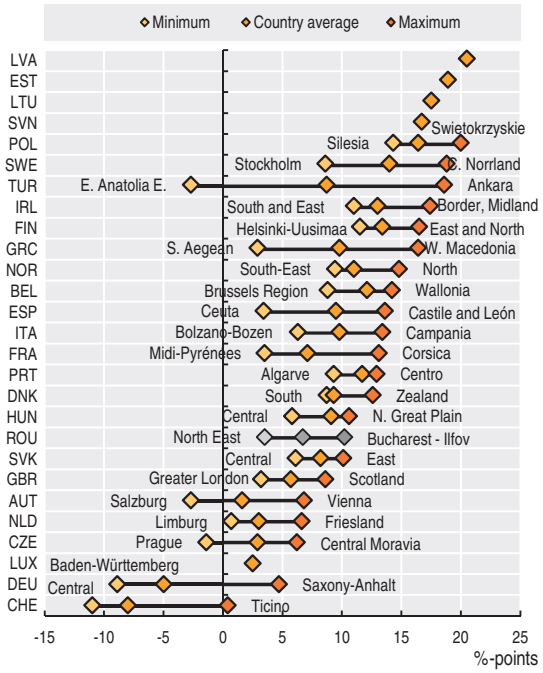
Difference between male and female employment rates; TL2; 2017 and 2000



StatLink http://dx.doi.org/10.1787/888933817808

3.26. Gender gap in tertiary education, 2017

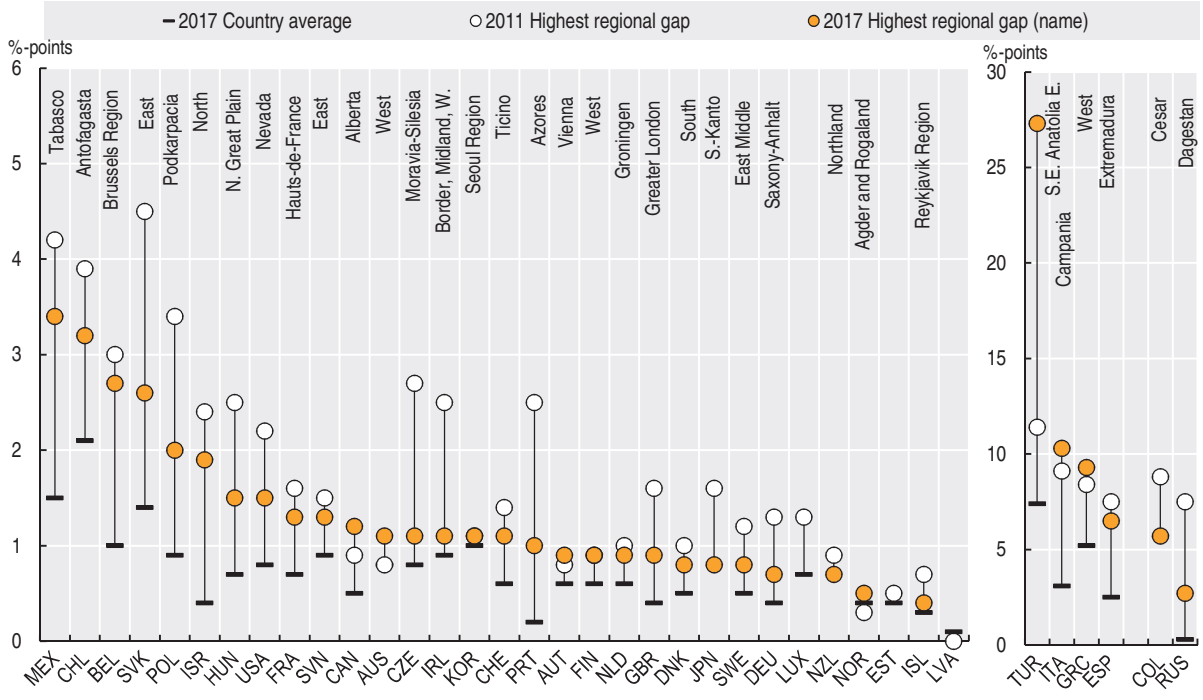
Difference between the % of women and men with tertiary education; TL2



StatLink http://dx.doi.org/10.1787/888933817827

3.27. Gender gap in unemployment rate in the region with the largest gap

Difference between female and male unemployment rates; TL2, 2017 and 2011



StatLink http://dx.doi.org/10.1787/888933817846

Female migrant integration in the labour market

Gender differences in employment rates are larger for migrants than for the native-born population, generating regional disparities in this indicator that are twice as big for migrants than natives.

The participation of migrant women in the labour market is a key element for their social integration and overall well-being. In the OECD, on average, the employment rate of female foreign-born is almost 8 percentage points lower than for female native-born. Only in 14% of the regions, foreign-born women display better or similar outcomes in employment than the female native-born, with the largest differences observed in Campania (Italy), Alaska (United States), North Portugal, and Central Transdanubia (Hungary) (Figure 3.28).

Gender differences in employment rates reveal the extent to which women are lagging behind in terms of participation in the labour market compared to the male population. Figure 3.29 shows that in practically all regions considered, both the female foreign-born as well as the female native-born populations are underrepresented in the labour market compared, respectively, to foreign- and native-born males. While on average the employment gender gap of the native-born population is 7.6 percentage points, this indicator goes up to 15.5 percentage points for the migrant population.

Definition

The terms "foreign-born" and "migrants" are used interchangeably. Migrants are defined by place of birth. The foreign-born or migrant population is defined as the population born in a country different from the one of residence. Unlike citizenship, this criterion does not change over time, it is not subject to country differences in legislation and it is thus adequate for international comparisons.

The youth employment rate is defined as the ratio between employed persons aged between 15 and 34 and the labour force in the same age class (excluding those in education or training).

The challenges faced by migrant women to participate in the labour market can be very different across places compared to those faced by their native-born peers. For example, regional disparities (the differences between the highest and lowest regional values) in the gender employment gap of migrants are, on average, 14 percentage points, which is 7 percentage points higher than those faced by natives. With the exception of Ireland, Canada, and Switzerland, regional disparities in gender gaps are higher for the foreign-born than for the native-born population. In their respective country, only the regions of Alberta (Canada), Ticino (Switzerland), Eastern Slovenia, and East Middle Sweden, display the highest gender gaps for both the native- and the foreign-born population (Figure 3.29).

Source

OECD (2018), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2015; 2014-2015 (two year average) for European countries and US; TL2.

Further information

Territorial grids and regional typology (Annex A)

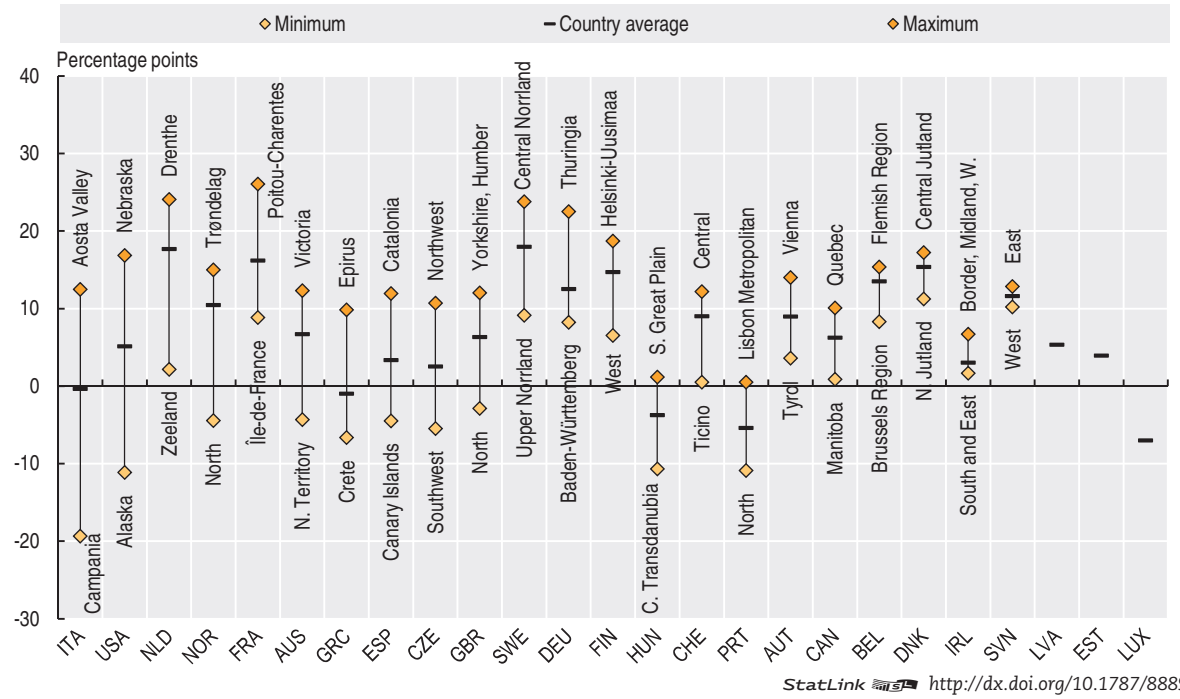
Diaz Ramirez, M., et al. (2018), "The integration of migrants in OECD regions: A first assessment", *OECD Regional Development Working Papers*, No. 2018/01, OECD Publishing, Paris. *http://dx.doi.org/10.1787/fb089d9a-en*.

Figure notes

3.28 and 3.29: Employment rates are expressed as a percentage of their respective gender-age class population.

3.28. Female employment rates of the foreign-born, relative to the native-born

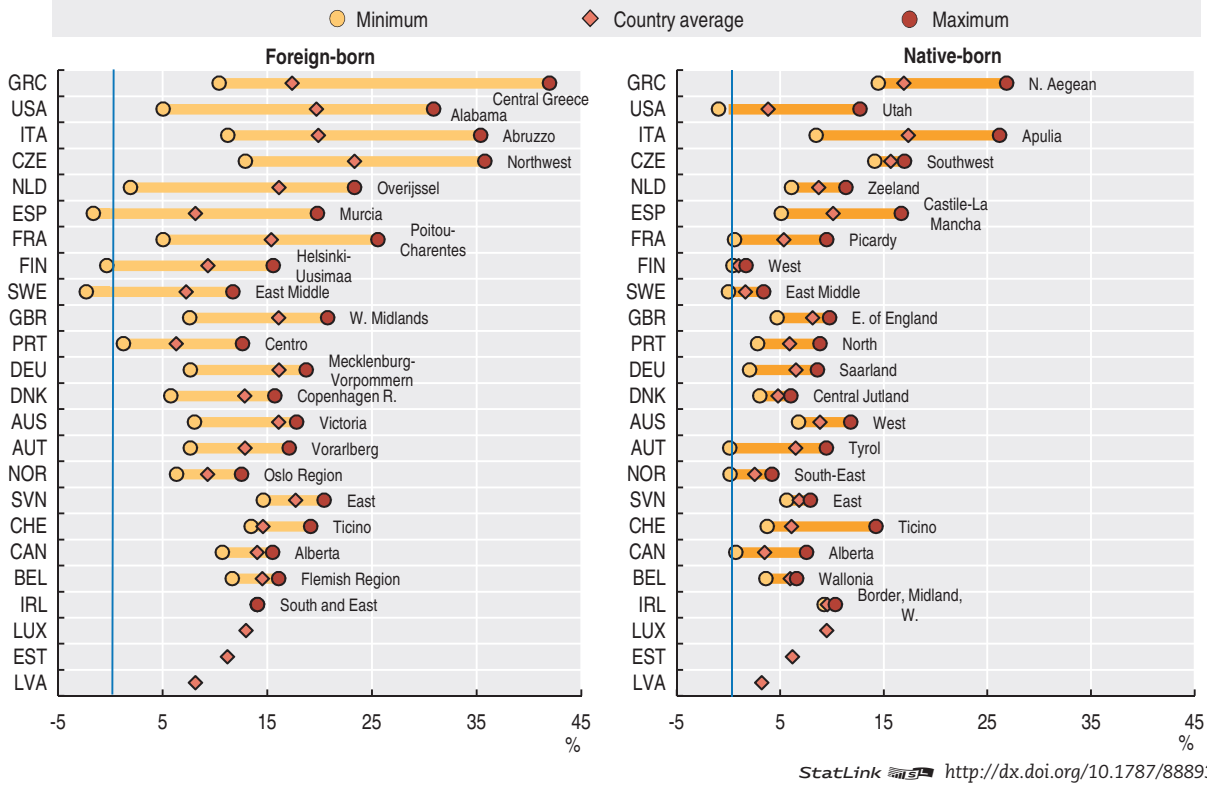
Difference between native-born and foreign-born outcomes; large regions (TL2), 2015



StatLink http://dx.doi.org/10.1787/888933817865

3.29. Gender employment gap of the foreign- and native-born population

Difference between male and female employment rates; large regions (TL2), 2015



StatLink http://dx.doi.org/10.1787/888933817884





4. CITIES AND NATIONAL ECONOMIES

City population in OECD countries

Suburbanisation and land-use within metropolitan areas

Contribution of metropolitan areas to national economies

Household income in metropolitan areas

Income inequality and poverty in cities

Income segregation in cities

Access to services in cities

Air quality in cities

The data in this chapter refer to metropolitan areas identified on the basis of population density and commuting journeys, independently of administrative boundaries.

City population in OECD countries

Cities continue to grow, with the strongest growth in the largest metropolitan areas.

The OECD area is highly urbanised. In 2015, the vast majority of the population across OECD countries lived in urban agglomerations. The latter are defined as densely populated cities surrounded by commuting zones and are referred to also as functional urban areas (FUAs). Overall, 69% of the total population in the 33 OECD countries lived in urban agglomerations in 2015. In 29 out of the 33 OECD countries studied, that share was higher than 50% (Figure 4.1). Only in Norway, Slovakia, Slovenia, and Switzerland, the percentage of the population living in urban agglomerations was below 50%. On the other hand, in seven countries (Australia, Chile, Iceland, Japan, Korea, Luxembourg, and Netherlands), more than three-quarters of the total population reside in urban agglomerations.

In the 15 years between 2000 and 2015, the relative importance of functional urban areas as population centres has continued to grow. The population living in urban agglomerations grew by more than 90 million in 2000 to a total of 855 million in 2015. While all urban agglomerations in the OECD recorded, on average, positive population growth, the largest ones grew faster, on average (Figure 4.2). Large metropolitan areas, defined as those functional urban areas with more than 1.5 million residents, experienced the fastest population growth with an approximately 13% increase, on average, over this 15-year period. Metropolitan areas with a population between 500 000 and 1.5 million grew by around 11%. Medium-sized (between 200 000 and 500 000 inhabitants) and small (below 200 000 inhabitants) urban agglomerations grew by approximately 10% and 7%, respectively.

Definition

In 33 OECD countries, 1 071 functional urban areas were identified according to the OECD EU methodology that identifies functional urban areas on the basis of densely populated cities and their commuting zones (travel to work journeys) to reflect the economic geography of the population's daily commuting patterns (see Annex A for details).

The growth patterns of functional urban areas differed significantly across continents, also reflecting national population trends. In the Americas, all types of urban agglomerations recorded high average population growth of 18-21%, with medium-sized ones growing the most. In contrast, population growth in European urban agglomerations was more modest, falling below 10% in all four categories. Larger metropolitan areas grew considerably more (9%) than medium-sized functional urban areas (5%) and small urban areas (3%). Functional urban areas in Asia and Oceania show an even more concentrated growth trajectory, with stronger growth in the largest and smallest agglomerations. While larger metropolitan areas and small urban areas grew by more than 10%, the population of metropolitan areas and medium-sized urban agglomerations remained constant.

As a result of sustained population growth in large metropolitan areas in the OECD area, there are now 102 functional urban areas with a population of at least 1.5 million, which is an increase of 11 functional urban areas relative to 2000. All of the eight most populated metropolitan areas have more than 10 million inhabitants and the three largest ones in 2015 were Tokyo, Seoul, and Mexico City with more than 35, 32, and 20 million inhabitants, respectively.

Source

OECD (2018), "Metropolitan areas", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/data-00531-en*.

Reference years and territorial level

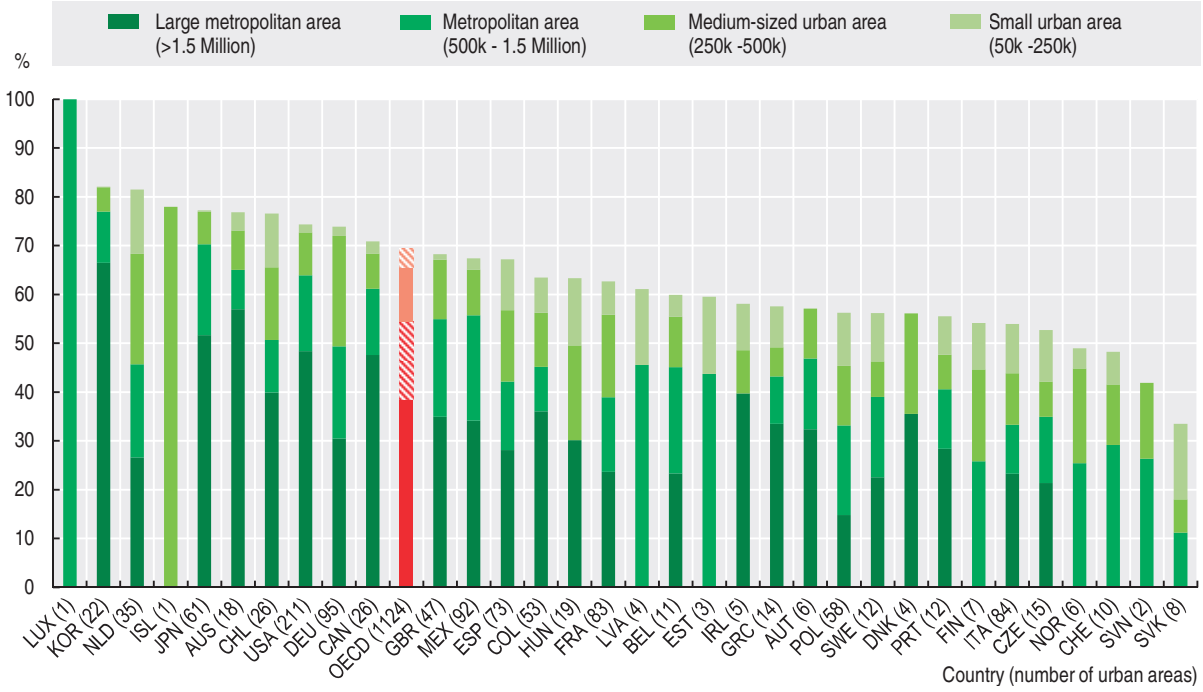
For lack of comparable data on commuting, functional urban areas have not been identified in Israel, New Zealand and Turkey.

Further information

OECD (2012), *Redefining "Urban": A New Way to Measure Metropolitan Areas*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264174108-en*.

4.1. Share of people living in cities, 2015

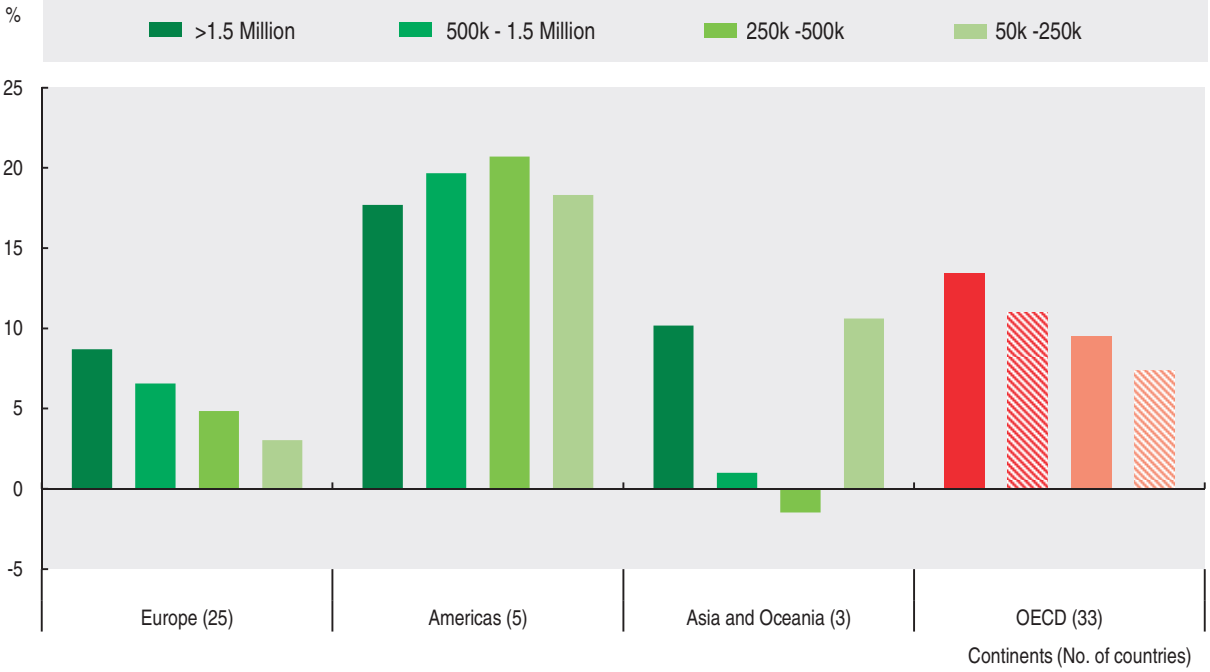
Population in functional urban areas over total population



StatLink http://dx.doi.org/10.1787/888933817903

4.2. Population growth of cities by size, 2000-15

Population growth in functional urban areas



StatLink http://dx.doi.org/10.1787/888933817922

Suburbanisation and land-use within metropolitan areas

In the past 15 years the population in the periphery of metropolitan areas has grown faster than in urban cores, while land consumption per capita in metropolitan areas has increased.

In the OECD, annual population growth between 2000 and 2015 was around 60% higher in commuting zones than in the core of metropolitan areas (Figure 4.3). This process of suburbanisation was most marked in Korea, Estonia, Mexico, Chile, and the United States, where the population growth in commuting zones was more than twice that of urban cores.

During this period, land consumption (built-up area per capita) increased on average by 1.8% but changes in land consumption were quite heterogeneous across metropolitan areas (Figure 4.4). In Mexico, Spain, and the United States some areas (Ensenada, Palma de Mallorca, Washoe) experienced a reduction in built-up area per capita of around 20% while other areas in the same countries (Juárez, Bilbao, Providence) recorded an increase of built-up area per capita of the same magnitude. The highest and lowest changes in land consumption occurred in the areas of Erfurt, Germany and Clark (Nevada), USA, respectively.

Definition

329 Metropolitan areas have been identified in 31 OECD countries (functional urban areas with population above 500 000), according to the OECD EU methodology that identifies metropolitan areas on the basis of densely populated cities and their commuting zones (travel to work journeys) to reflect the economic geography of the population's daily commuting patterns (see Annex A for details).

Across OECD countries, smaller cities have, on average, greater land consumption per capita than larger cities (Figure 4.5). In metropolitan areas, the built-up area in the commuting zones is, on average, almost 80% higher than in the city core. Land consumption differs considerably between countries. For example, in the United States and Australia, built-up area per capita is more than five times higher than in Korea or Mexico.

Source

OECD (2018), "Metropolitan areas", *OECD Regional Statistics* (database). *http://dx.doi.org/10.1787/data-00531-en*. Data were created using the Global Human Settlement Dataset.

Reference years and territorial level

Years 2000-2015, functional urban areas.

Further information

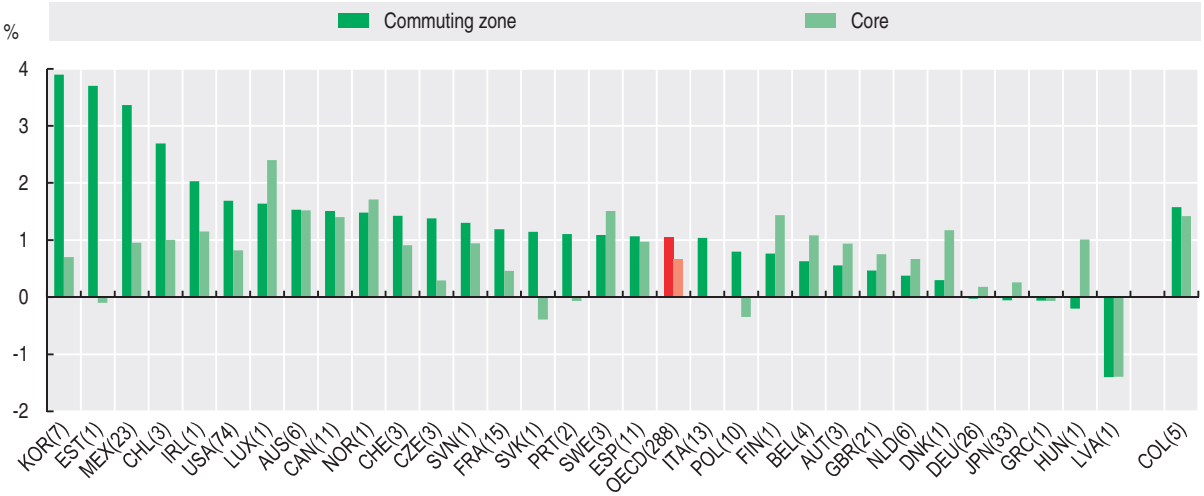
OECD (2012), *Redefining "Urban": A New Way to Measure Metropolitan Areas*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264174108-en*.

European Commission, Joint Research Centre (JRC); Columbia University, Center for International Earth Science Information Network - CIESIN (2015): GHS population grid, derived from GPW4, multitemporal (1975, 1990, 2000, 2015). European Commission, Joint Research Centre (JRC) [Dataset] PID: *http://data.europa.eu/89h/jrc-ghsl-ghs_pop_gpw4_globe_r2015a*.

Figure notes

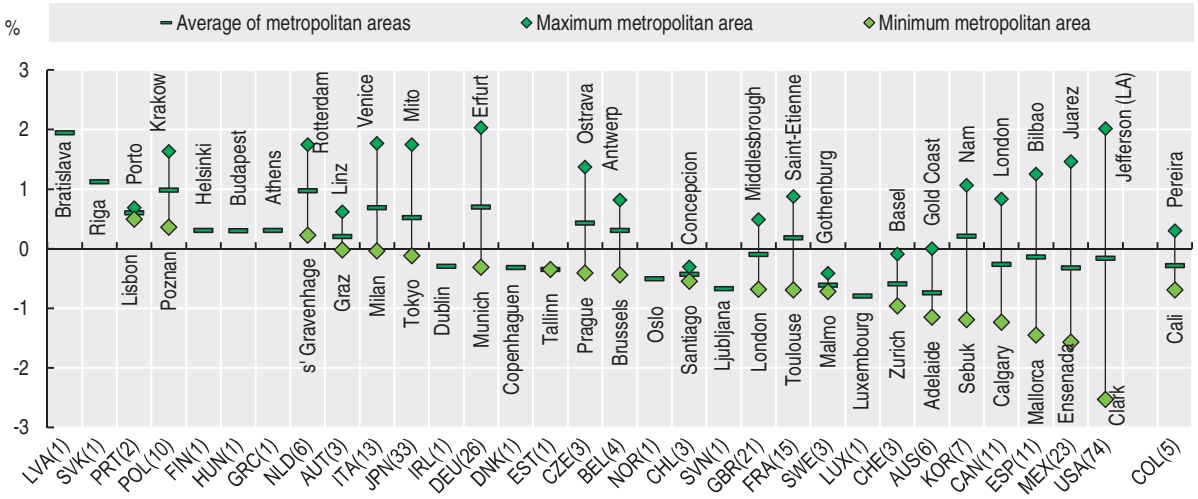
4.3: Only metropolitan areas with both a core and a commuting zone are included.

4.3. Annual population growth in the core and commuting zones of metropolitan areas, 2000-15



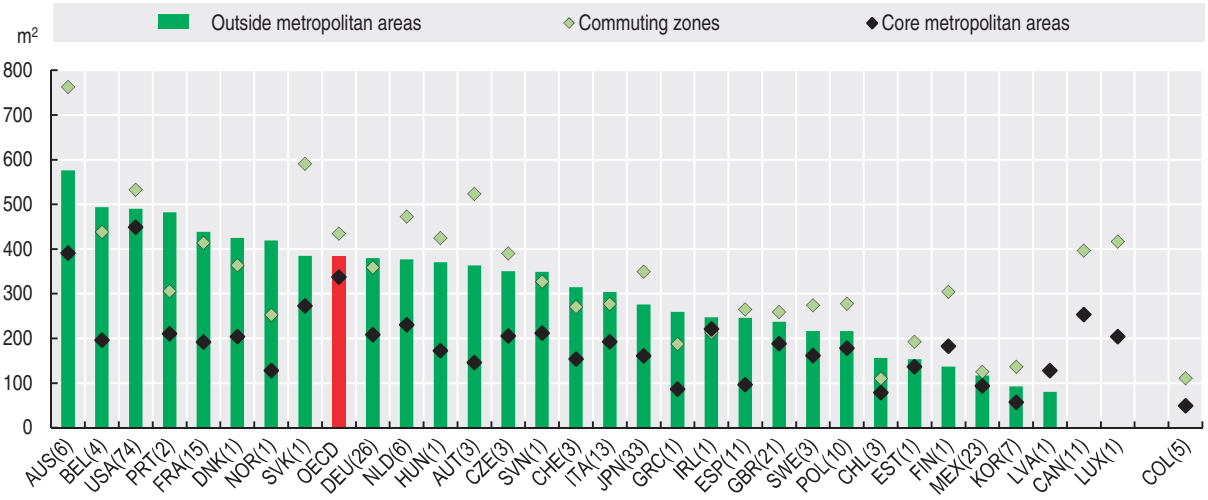
StatLink http://dx.doi.org/10.1787/888933817941

4.4. Annual change in built-up areas per capita in metropolitan areas, 2000-14



StatLink http://dx.doi.org/10.1787/888933817960

4.5. Average built-up area (square metres) per capita, 2014



StatLink http://dx.doi.org/10.1787/888933817979

Contribution of metropolitan areas to national economies

Capitals, typically the richest metropolitan areas, recorded per capita GDP 37% higher than national per capita GDP, on average.

OECD metropolitan areas (i.e., urban areas with population of greater than 500 000) account for 55% of the total OECD population, 59% of the employed, and around 60% of the total GDP in the OECD area. However, with respect to GDP, different patterns are observed across continents. While metropolitan areas represent on average less than half (48%) of total GDP in European OECD countries, they generate two-thirds (66%) of national GDP in OECD countries in Asia and the Americas (Figure 4.6).

Capital metropolitan areas (i.e., metropolitan areas that include the capital of the country) are the richest metropolitan areas for 22 out of the 31 countries covered in this report. GDP per capita of capital metropolitan areas is on average 37% higher than the national value (Figure 4.7). The richest capital metropolitan areas, relative to the overall country, are Bratislava (Slovak Republic), Warsaw (Poland), Paris (France), Prague (Czech Republic), Budapest (Hungary), and London (United Kingdom), with GDP per capita values that are 50% higher than that of the broader country in which they are located.

Shifting back to metropolitan areas in general, annual GDP growth has been 32% higher in metropolitan areas than in the rest of the country since 2000. In Denmark, Canada, France, Estonia, and Ireland, annual GDP growth in metropolitan areas has been twice as high as the growth in non-metropolitan areas (Figure 4.8). Metropolitan areas have contributed to 51% of annual GDP per capita growth in the OECD. In Ireland and Denmark metropolitan areas have contributed more than two-third of total per capita GDP growth, with a contribution above 80% in the case of France (Figure 4.9).

Definition

In 31 OECD countries, 329 Metropolitan areas were identified (functional urban areas with a population of greater than 500 000), according to the OECD EU methodology that identifies metropolitan areas on the basis of densely populated cities and their commuting zones (travel to work journeys) to reflect the economic geography of the population's daily commuting patterns (see Annex A for details).

Source

OECD (2018), "Metropolitan areas", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/data-00531-en*.

Reference years and territorial level

Metropolitan areas as defined in OECD (2012).

Further information

OECD (2012), *Redefining "Urban": A New Way to Measure Metropolitan Areas*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264174108-en*.

European Commission, Joint Research Centre (JRC); Columbia University, Center for International Earth Science Information Network - CIESIN (2015): GHS population grid, derived from GPW4, multitemporal (1975, 1990, 2000, 2015). European Commission, Joint Research Centre (JRC) [Dataset] PID: *http://data.europa.eu/89h/jrc-ghsl-ghs_pop_gpw4_globe_r2015a*.

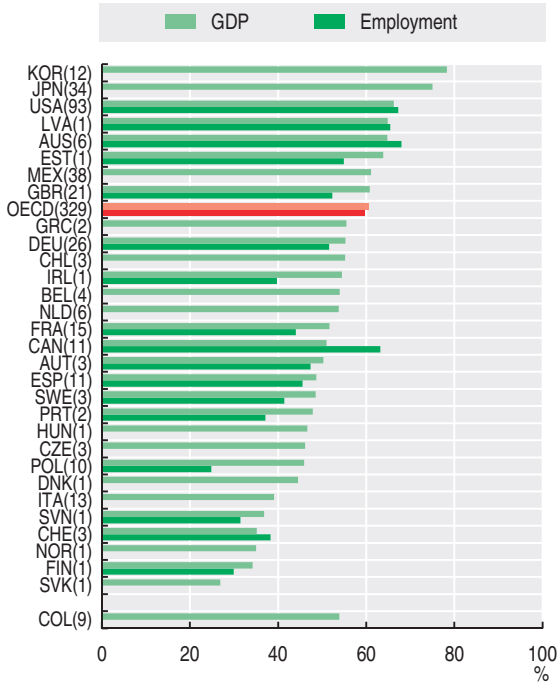
Figure notes

4.6: Only for employment related values, 2015 was the latest available year for the United Kingdom, and Portugal; 2014 for Austria, France, and Poland; and 2011for Ireland, and Sweden.

4.6-4.7: Only for GDP related values, 2015 was the latest available year for Austria, Switzerland, Netherlands, Portugal, Finland, Spain, Greece, Latvia, Sweden, Italy, Germany, France, Korea, Poland, and Colombia; 2014 for Japan, and Ireland; and 2013 for Canada.

4.8-4.9: 2001 was the first available year for Germany, Japan, United States, and Canada; 2003 for Mexico; and 2004 for Belgium.

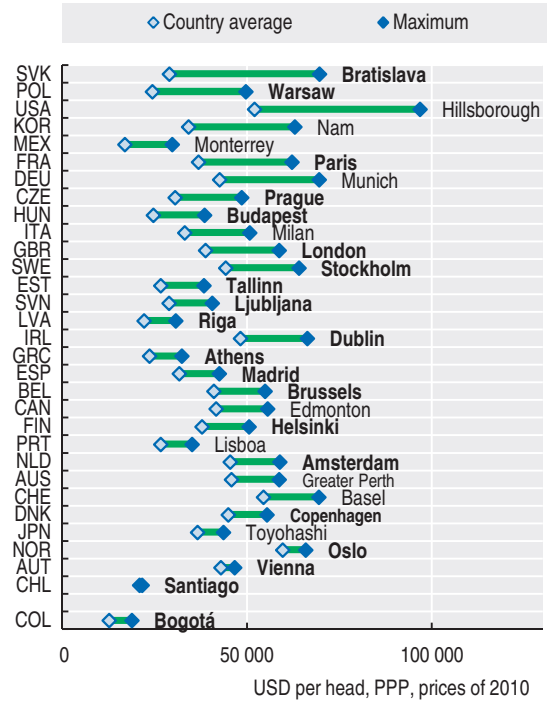
4.6. GDP and employment in metropolitan areas as a % of the national values, 2016



Note: Employment for the OECD includes 226 metropolitan areas.

StatLink http://dx.doi.org/10.1787/888933817998

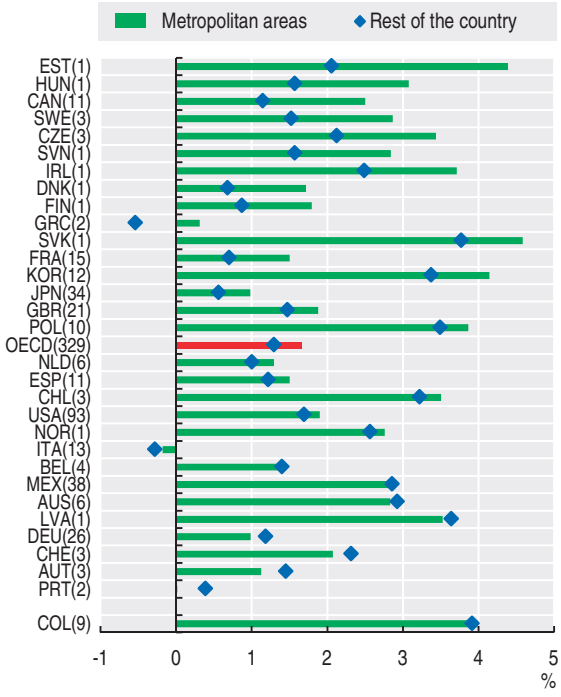
4.7. Metropolitan areas with the highest GDP per capita compared to the national average, 2016



Note: Capitals are in bold type. Metropolitan areas are ordered in terms of the ratio between the maximum and the country average.

StatLink http://dx.doi.org/10.1787/888933818017

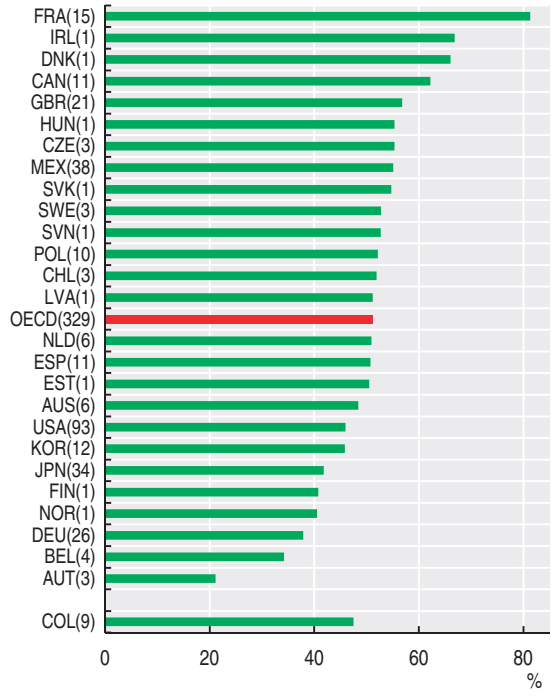
4.8. Annual GDP growth in metropolitan areas, 2000-16



Note: Ordered by the highest to lowest difference between the metropolitan areas and the rest of the country.

StatLink http://dx.doi.org/10.1787/888933818036

4.9. Contribution of metropolitan areas to annual GDP per capita growth



StatLink http://dx.doi.org/10.1787/888933818055

Household income in metropolitan areas

The income of metropolitan residents are, on average, 21% higher than those living elsewhere, but differences between metropolitan areas within the same country can be sizeable.

People living in metropolitan areas have on average a 21% higher income than the rest of the country (Figure 4.10). Differences between the average income in metropolitan areas and the rest of the country are highest in Chile (60% higher), followed by Mexico (51%) and Estonia (34%). Belgium is the only country where income levels are higher outside metropolitan areas.

Within each country, the differences in average disposable income between metropolitan areas are considerable. Mexico has the highest dispersion of income levels across cities, with the average income in Hermosillo being 2.5 times higher than in Orizaba (Figure 4.11). In the United States and Italy, income in the richest metropolitan area (San Francisco and Bologna) was also more than twice as high as in the metropolitan area with the lowest income levels (Hidalgo and Palermo). The metropolitan areas with the highest income compared to the national income are Hermosillo (Mexico, 66%), Santiago (Chile, 53%) and San Francisco (USA, 46%). In contrast, income levels in Hidalgo (USA, 35%), Orizaba (Mexico, 34%), and Palermo (Italy, 32%) were significantly below than the average national income. In the majority of countries, capital cities are the metropolitan areas with the highest income level.

Income levels do not only vary across cities but also differ between different areas of the same city. Income levels in the city core are on average 3% higher than in the respective commuting zone (Figure 4.12). Countries are divided into two groups: a first group where residents in the core of metropolitan areas are on average richer than in the commuting zone (Mexico, Italy, Chile, Hungary, Portugal, Australia, Denmark, and the United States) and a second group where, on the contrary, residents in the commuting zone are richer (Germany, Sweden, France, the United Kingdom, Estonia, Austria, the Netherlands and Belgium). The gap between the core and the commuting zone is highest for Mexico (51% higher in the core) and Italy (20%) and lowest for Belgium (19% lower in the core than in the commuting zone) and the Netherlands (15%).

Source

See Annex B for details on data sources.

Reference years and territorial level

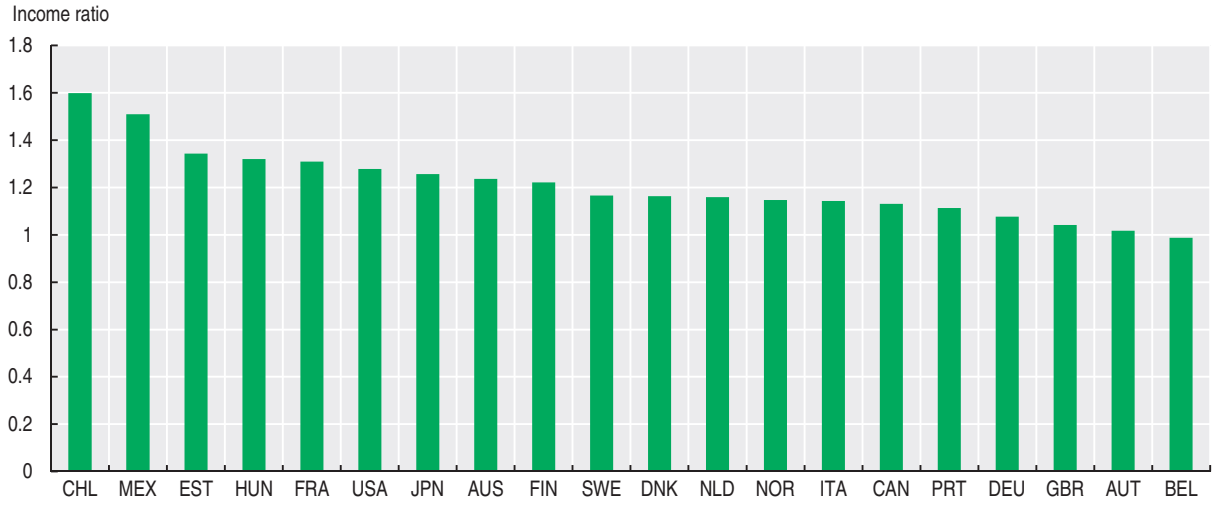
2016 or latest available year. Estonia, 2017; France, 2015; Germany, 2013.

Further information

Boulant, J., M. Brezzi and P. Veneri (2016), "Income Levels and Inequality in Metropolitan Areas: A Comparative Approach in OECD Countries", *OECD Regional Development Working Papers*, 2016/06, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jlwj02zz4mr-en*.

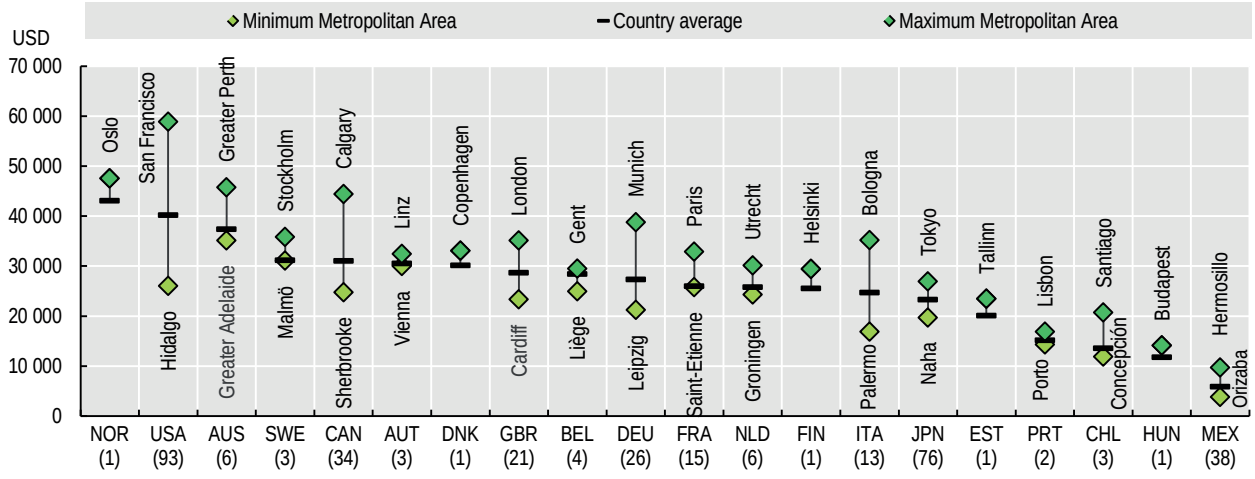
OECD (2012), *Redefining "Urban": A New Way to Measure Metropolitan Areas*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264174108-en*.

4.10. Income ratio of metropolitan and non-metropolitan areas, by country



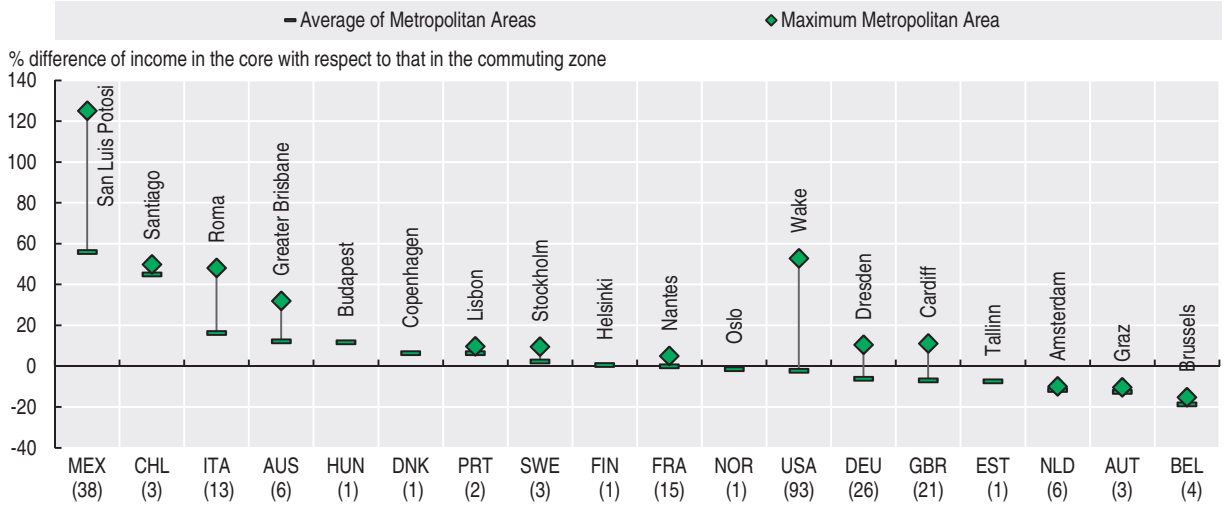
StatLink http://dx.doi.org/10.1787/888933818074

4.11. Household disposable income in metropolitan areas, 2016



StatLink http://dx.doi.org/10.1787/888933818093

4.12. Income differences between core and commuting zone, 2016



StatLink http://dx.doi.org/10.1787/888933818112

Income inequality and poverty in cities

Poverty rates are slightly lower in metropolitan areas than elsewhere, even though income inequality is 3.3% higher than the national average.

Metropolitan areas recorded slightly higher income inequality than non-metropolitan areas in 11 OECD countries where data was available. This reflects in part a relatively higher concentration of human capital in metropolitan areas compared to other places. On average, the Gini index of inequality is 3.3% higher in metropolitan areas than in the rest of the respective country (Figure 4.13). The countries with the largest national income inequality such as Chile, the US and Canada also display the largest variation in income inequality across metropolitan areas. For instance, dispersion in Canada is highest, with the Gini index in Calgary being approximately 0.45 but only 0.29 in Québec city. In the US, income inequality is 31% higher in Miami than in the city of Lancaster (PA). Santiago in Chile is the most unequal city in the 10 countries considered.

Poverty rates, defined as the proportion of households having an income below 50% of the national median income, are similar between metropolitan and non-metropolitan areas. However, poverty can be more prevalent in some metropolitan areas than in others within the same country. In Italy, for example, Bologna is the metropolitan area with the lowest poverty rate, while in Naples the level of poverty is higher than the national average (Figure 4.14). The largest differences between metropolitan and national poverty rates exist in Norway, Denmark, Belgium (poverty being higher in the metropolitan areas than at national level) and Portugal, Italy, and France (poverty being lower in the metropolitan areas). Hidalgo (Texas, US), where almost 40% of the population lives below the national poverty line, is the metropolitan area with the highest poverty rate among those considered in this report. The largest differences in poverty rates across metropolitan areas exist in the United States, ranging from 40% (Hidalgo, Texas) to 5% (Hennepin, Minnesota). Comparisons of poverty rates across metropolitan areas should be interpreted cautiously, however, as they might be at least partially compensated by differences in price levels.

Source

OECD (2018a), "Metropolitan areas", *OECD Regional Statistics* (database). *http://dx.doi.org/10.1787/data-00531-en*.

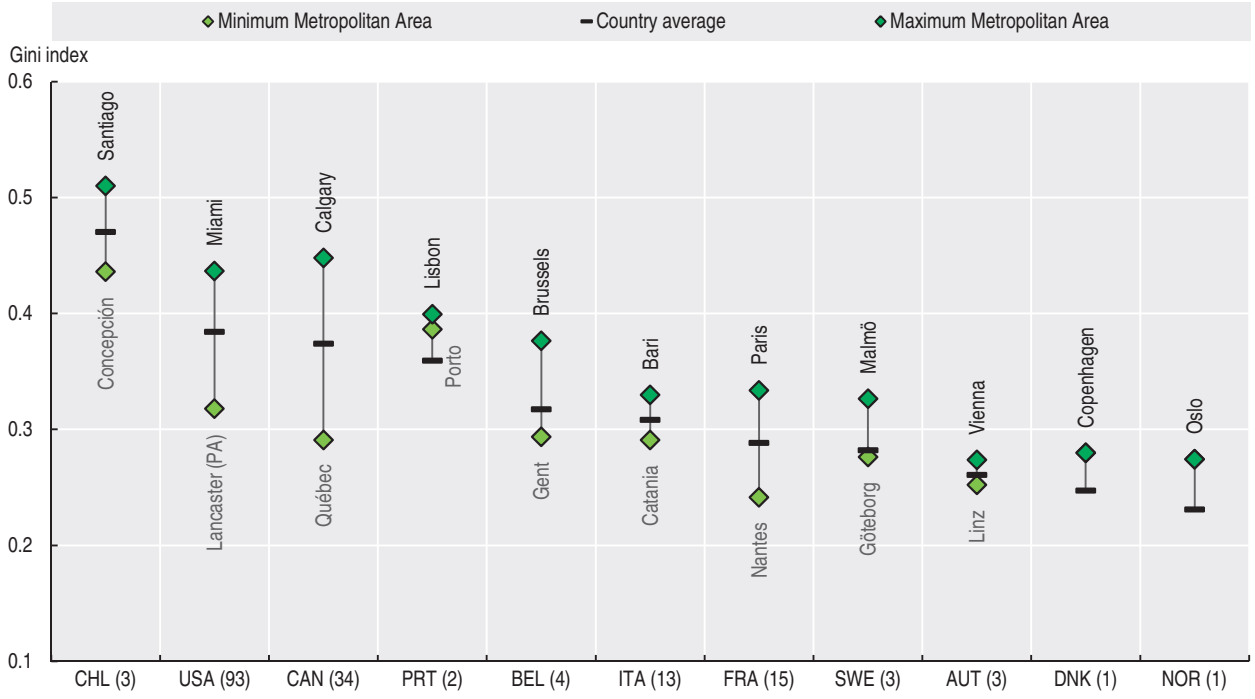
Reference years and territorial level

4.13, 4.14: Last available year 2017 for Estonia; 2014 for France; 2013 for Germany.

Figure notes

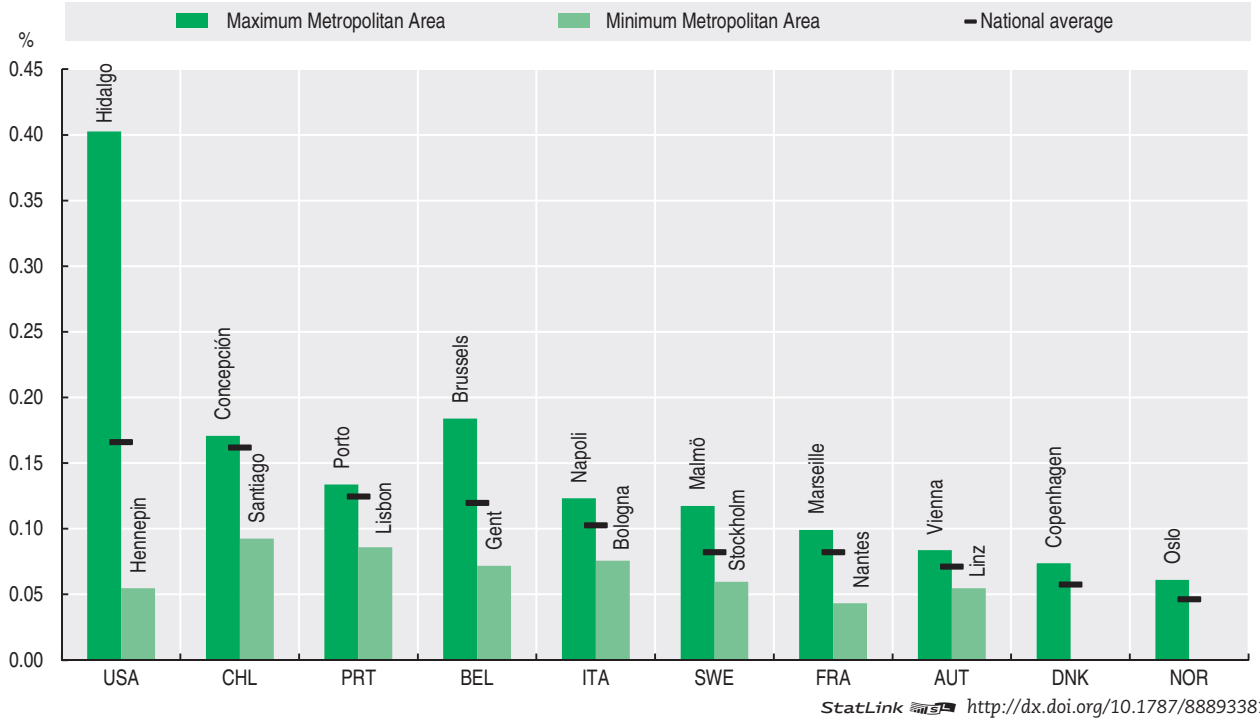
4.14: The poverty rates were computed based on the median household disposable income per equivalent household from the OECD Income Distribution database. These values were available for following years: 2015 for Chile, the US, Portugal, Belgium, France, Norway, Sweden, Austria; and 2014 for Denmark and Italy. The poverty rates at the national level were also taken from the OECD Distribution Income Database (*http://www.oecd.org/social/income-distribution-database.htm*).

4.13. Inequality in disposable income in metropolitan areas, 2016 or latest available year



StatLink http://dx.doi.org/10.1787/888933818131

4.14. Poverty rates in metropolitan areas, 2016 or latest year available



StatLink http://dx.doi.org/10.1787/888933818150

Income segregation in cities

Segregation in metropolitan areas is mostly driven by the most affluent households congregating in specific neighbourhoods.

The concentration of residents in particular neighbourhoods within cities is not random but is often related to characteristics such as household income or country of origin. While the concentration of homogeneous groups of people in different neighbourhoods is to some extent a natural phenomenon of urban development, it might become a problem when it leads to isolation and low access to jobs and services of the most disadvantaged groups. In a sample of ten OECD countries plus Brazil and South Africa, levels of neighbourhood concentration along household income – also called segregation – vary considerably across cities, even within the same country (Figure 4.15). Segregation is highest in Brazil, South Africa and the United States, three countries with a history of both segregation and high income inequality. In contrast, income segregation is relatively low in New Zealand, Denmark, or the Netherlands, countries where overall economic inequality is also low.

In the most extreme case, average income segregation levels in Brasilia, the most segregated city in the sample, are seven times higher than in Auckland, the most segregated city in New Zealand. Within-country differences are less pronounced across richer countries with lower overall levels of inequality, with the exception of France. In France, income segregation is most severe in Paris, where it is almost two and a half times higher than in the French metropolitan area with the lowest level of income segregation, Saint Etienne.

Not all income groups show the same level of segregation. On average, top and bottom income groups are more likely to live separately in neighbourhoods with a low proportion of households from other income groups. In most countries, geographic segregation within cities is highest for rich households (Figure 4.16). Segregation is more prevalent for the richest quintile (in terms of income distribution) of households than the poorest quintile in all but two countries. Only in Denmark and Netherlands the poor are more likely to live in segregation than the rich. However, these countries generally have low levels of segregation. On average, income segregation tends to be higher in larger, more affluent cities with and more unequal cities (OECD, 2018b).

Source

OECD (2018a), "Metropolitan areas", *OECD Regional Statistics* (database). *http://dx.doi.org/10.1787/data-00531-en*.

OECD (2018b), "Divided Cities: Understanding Intra-urban Inequalities", OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264300385-en*.

Reference years and territorial level

Metropolitan areas as defined in OECD (2012).

Further information

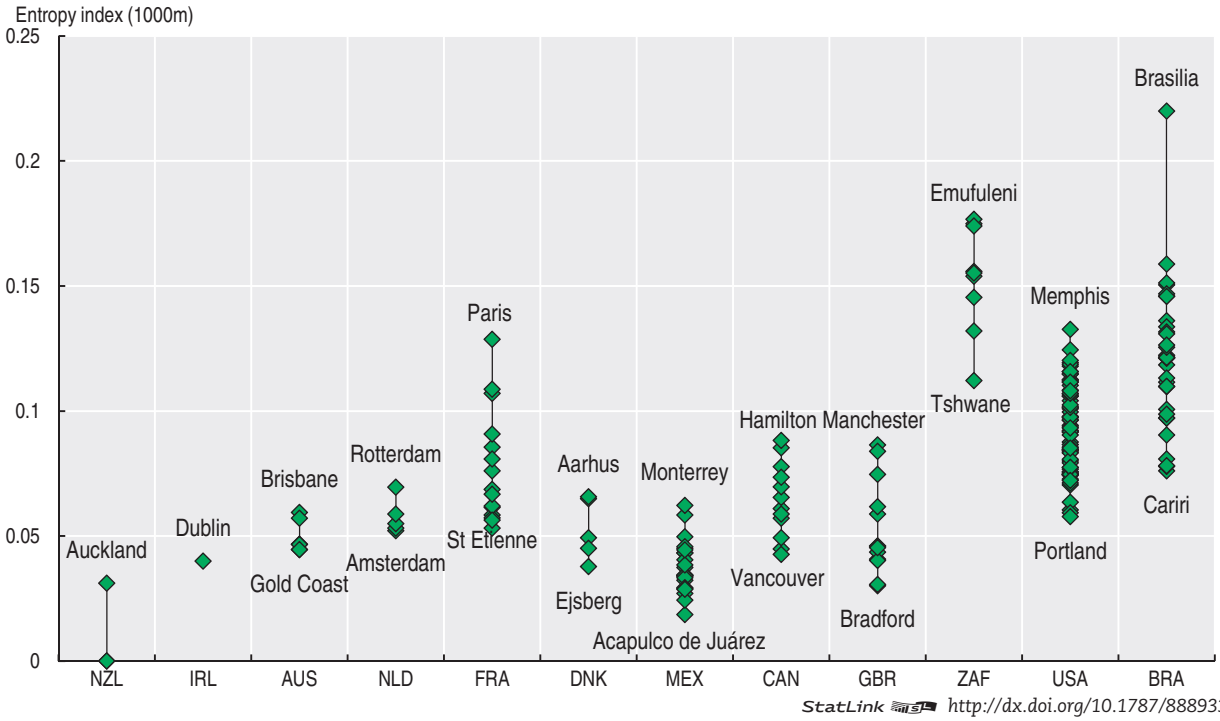
OECD (2012), *Redefining "Urban": A New Way to Measure Metropolitan Areas*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264174108-en*.

Figure notes

4.15-4.16: Data refer to 2014 for the United States; 2013 for Denmark and New Zealand; 2011 for Brazil, Canada, France, Ireland, United Kingdom and South Africa; 2010 for Australia; 2008 for the Netherlands; 2000 for Mexico. National definitions of urban areas have been used in the case of Brazil, New Zealand, and South Africa as the EC-OECD FUA definition was not available for those countries. Source: Authors' calculations based on income data (see Annex B for data sources).

4.15. Income segregation levels across functional urban areas in each country

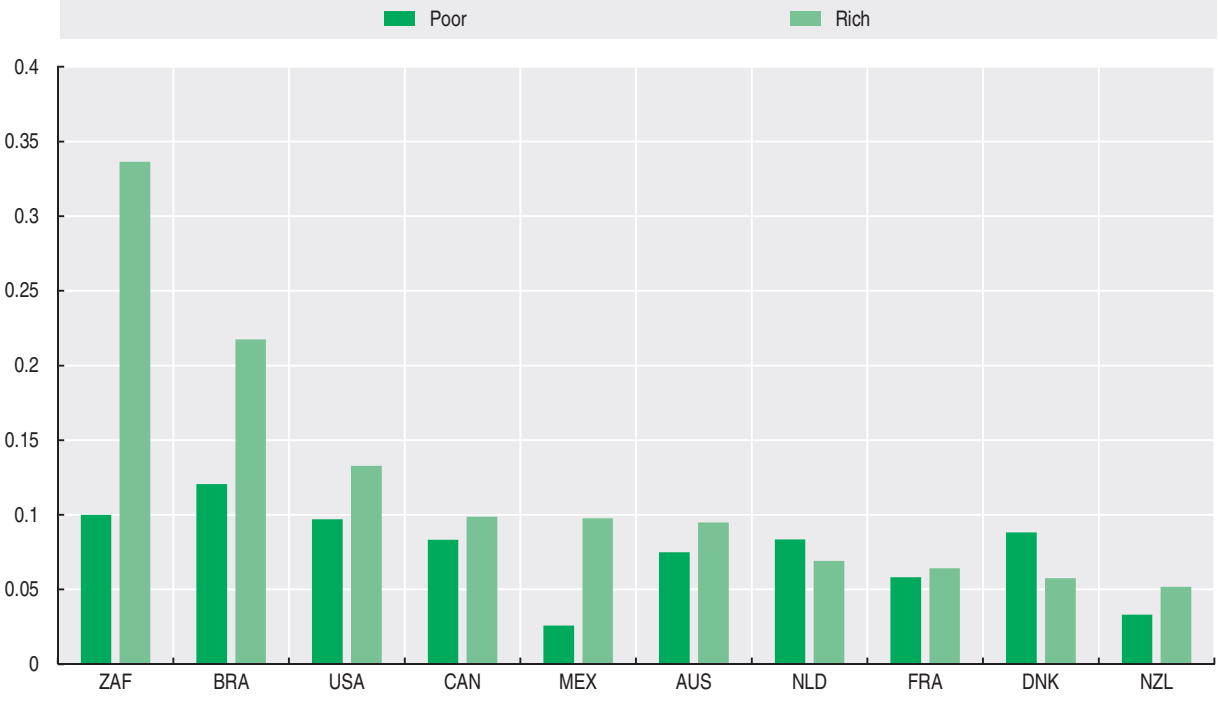
Spatial entropy (1000 m scale), 1 = complete segregation



StatLink http://dx.doi.org/10.1787/888933818169

4.16. Income segregation in the bottom and top income groups by country

Entropy index for top and bottom 20% income groups (1 = complete segregation)



StatLink http://dx.doi.org/10.1787/888933818188

Access to services in cities

While 87% of people living in the core of metropolitan areas have access to health services nearby, only 57% of people living in commuting zones benefit from the same degree of access.

Within countries, there are large disparities in access to services and amenities across metropolitan areas. For example, in the United Kingdom, Spain, Austria, France, and Italy, the difference between the metropolitan areas with the highest and lowest percent of population with access to green areas within 15 minutes of walking is of at least 25 percentage points (Figure 4.17). This pattern is also observed in other kinds of services, such as access to hospitals. Whereas at least 90% of the population of Valencia (Spain), Catania (Italy), and Paris (France) have access to a hospital within 30 minutes of driving, only around 70% of the inhabitants of Las Palmas (Spain), Genova (Italy), and Rennes (France) count with the same degree of accessibility to this service (Figure 4.18).

Large spatial disparities in acces to health services are also present within metropolitan areas. For example, in the urban cores of the OECD metropolitan areas, 87% of the population have access to a hospital within 30 minutes of driving, while only 57% of the people living in the commuting zones can benefit from the same type of service. In Hungary, Estonia, Austria, and Slovenia, the disparities in access to hospitals between the core and the periphery are more than 50 percentage points, while in Greece, the United Kingdom, Belgium, Italy, and the Netherlands, these inequalities are less than 25 percentage points (Figure 4.19).

Definition

In 31 OECD countries, 329 metropolitan areas have been identified (functional urban areas with population above 500 000) according to the OECD-EU methodology that defines metropolitan areas on the basis of densely populated cities and their commuting zones (travel to work journeys) to reflect the economic geography of the population's daily commuting patterns (see Annex A for details).

Source

OECD (2018), "Metropolitan areas", *OECD Regional Statistics* (database). *http://dx.doi.org/10.1787/data-00531-en*.

Green space: Copernicus Urban Atlas 2012. Hospitals: Data aggregated at 500 m^2 grid level, provided by the European Commission, Joint Research Centre.

Reference years and territorial level

Metropolitan areas as defined in OECD (2012).

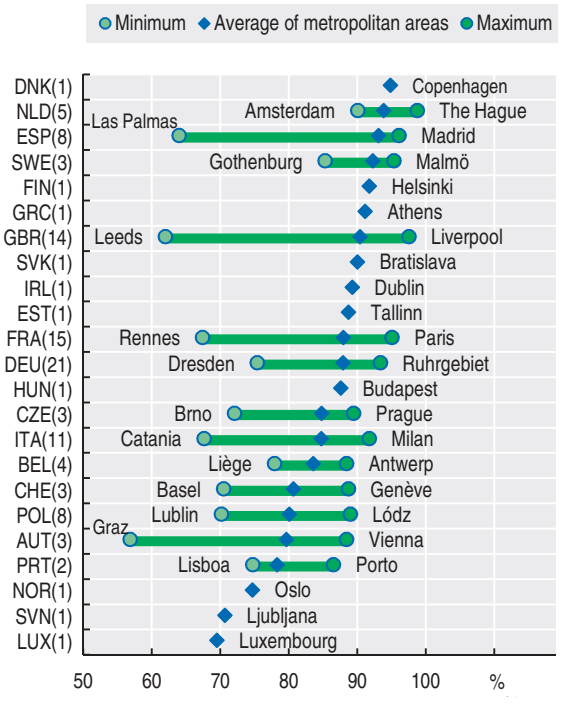
Further information

OECD (2012), *Redefining "Urban": A New Way to Measure Metropolitan Areas*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264174108-en*.

European Commission, Joint Research Centre (JRC); Columbia University, Center for International Earth Science Information Network - CIESIN (2015): GHS population grid, derived from GPW4, multitemporal (1975, 1990, 2000, 2015). European Commission, Joint Research Centre (JRC) [Dataset] PID: *http://data.europa.eu/89h/jrc-ghsl-ghs_pop_gpw4_globe_r2015a*.

4.17. Access to green spaces in metropolitan areas, 2012

Percentage of people with access to 1 hectare of green urban space within a 15-minute walk

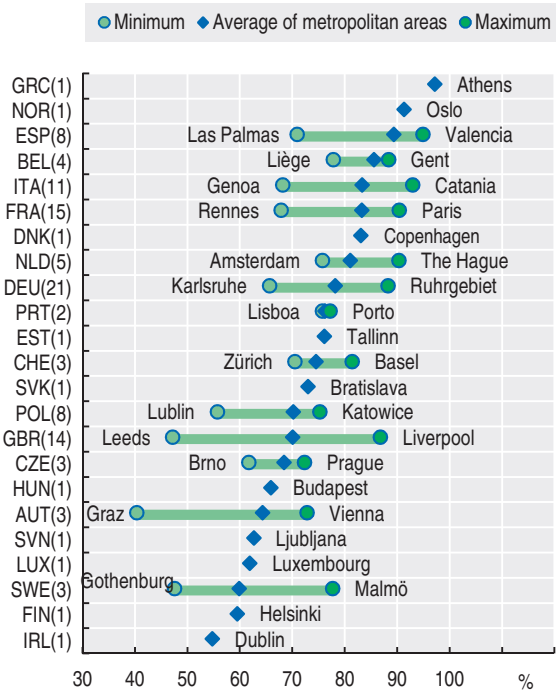


Note: Ordered from highest to lowest average.

StatLink http://dx.doi.org/10.1787/888933818207

4.18. Access to hospitals in metropolitan areas, 2017

Percentage of people with access to 1 hospital within a 30-minute drive

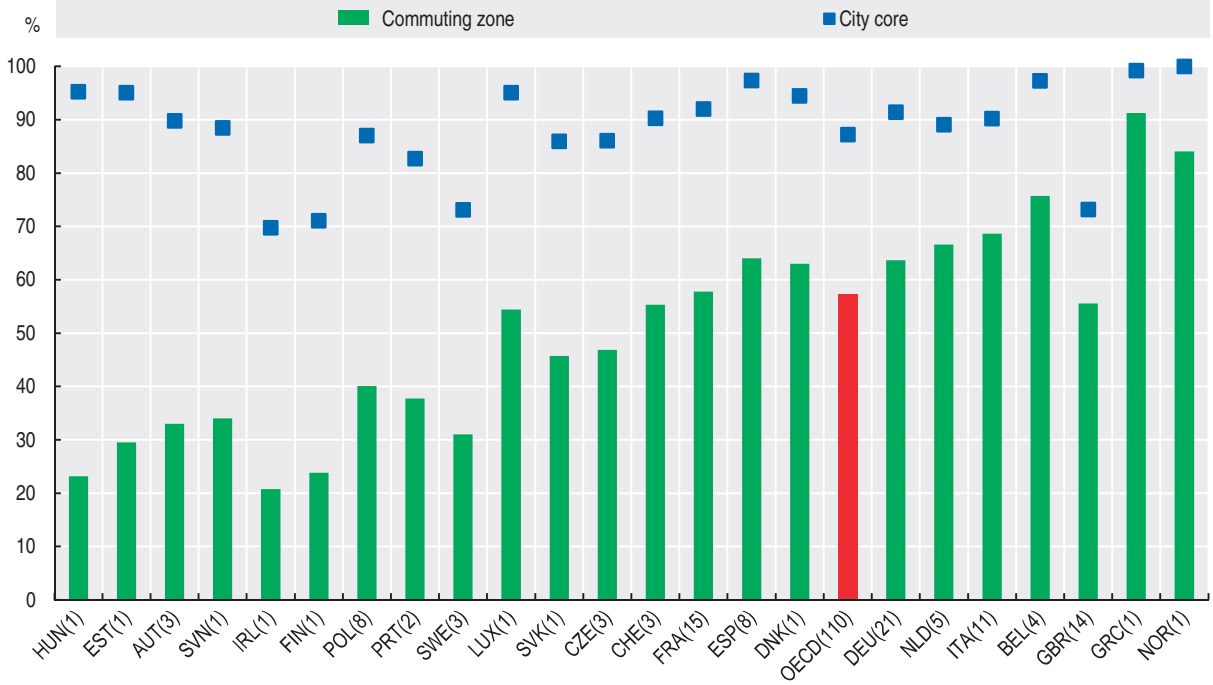


Note: Ordered from highest to lowest average.

StatLink http://dx.doi.org/10.1787/888933818226

4.19. Access to hospitals in the core and commuting zones of metropolitan areas, 2017

Percentage of people with access to 1 hospital within a 30-minute drive



StatLink http://dx.doi.org/10.1787/888933818245

Air quality in cities

Following improvements in the last decade, air pollution in cities has started to increase again.

The level of air pollution experienced by people in the place where they live is an important feature of their well-being and directly affects their health. Air pollution in cities is often higher than in other areas of a country due to the geographical concentration of people and economic activities, which results in higher emissions from different sources. In the countries of the OECD, air quality can be very different across cities within the same country. For example, average exposure to PM2.5 in Santiago (Chile), Mexico City (Mexico) and Windsor (Canada) is more than five times higher than in other cities of the same country. In contrast all cities in Ireland, Norway and Finland have relatively low levels of air pollution (Figure 4.20). In Finland, cities of more than 50 000 inhabitants even have air pollution levels that are less than the national average. Part of the differences observed across cities are driven by characteristics of the cities, including climate, altitude, as well as population density, and the type of economic activity. However, national and local efforts to reduce air pollution, such as policy and regulation in the fields of transport, energy and economic development, play a crucial role in reducing air pollution. Improvements in air quality in a city are fairly likely to benefit all or a large part of its population. It should be acknowledged that seasonal fluctuations in air quality can occur and affect the measure presented in this report.

Definition

Particulate matter (PM), refers to a complex mixture of sulphates, nitrates, ammonia, sodium chloride, carbon, mineral dust and water suspended in the air. Particles can be classified in two categories according to their origin (WHO, 2013). On the one hand, primary PM is emitted from the combustion of liquid and solid fuels for industrial and housing energy production as well as from the erosion of the pavement of the roads. On the other hand, secondary PM is the result of chemical reactions between gaseous pollutants.

PM2.5 air pollution data does not differentiate between manmade dust (anthropogenic) and non-anthropogenic dust; however, evidence indicates that dust is as hazardous as anthropogenic sources, and as such there are plausibly relevant policy responses such as warning systems that advise vulnerable people to stay indoors when levels are high.

In the OECD countries of the OECD, only around one-third (31%) of the population lives in cities that respected the World Health Organization's level of PM2.5 emissions in 2015 (below 10 µg/m^3). Notwithstanding an average decrease of average levels of PM2.5 by 18% between 2000 and 2015 (from 17.7 to 14.5 µg/m^3) in cities with more than 50 000 inhabitants, air pollution has started to grow again during the last five years (Figure 4.21). This increase was widespread, as observed in cities in 23 out of 29 OECD countries. Air pollution has grown by more than 20% in all Korean and Japanese cities (except Kushiro and Obihiro), and by greater than 40% in 16 of the 45 Korean cities. The highest growth of air pollution (more than 70%) occurred in Funchal (Portugal), although the average air quality, in 2015, in this city remained within WHO recommendations (at 8 µg/m^3 PM 2.5) (Figure 4.21).

Source

OECD (2018), "Metropolitan areas", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/data-00531-en*.

Data collected from OECD (2017) "Exposure to Air Pollution", *OECD Environment Statistics (database)*, *https://doi.org/10.1787/96171c76-en*.

Reference years and territorial level

2015, cities (functional urban areas)

Functional urban areas have not been identified in Iceland, Israel, New Zealand and Turkey.

Further information

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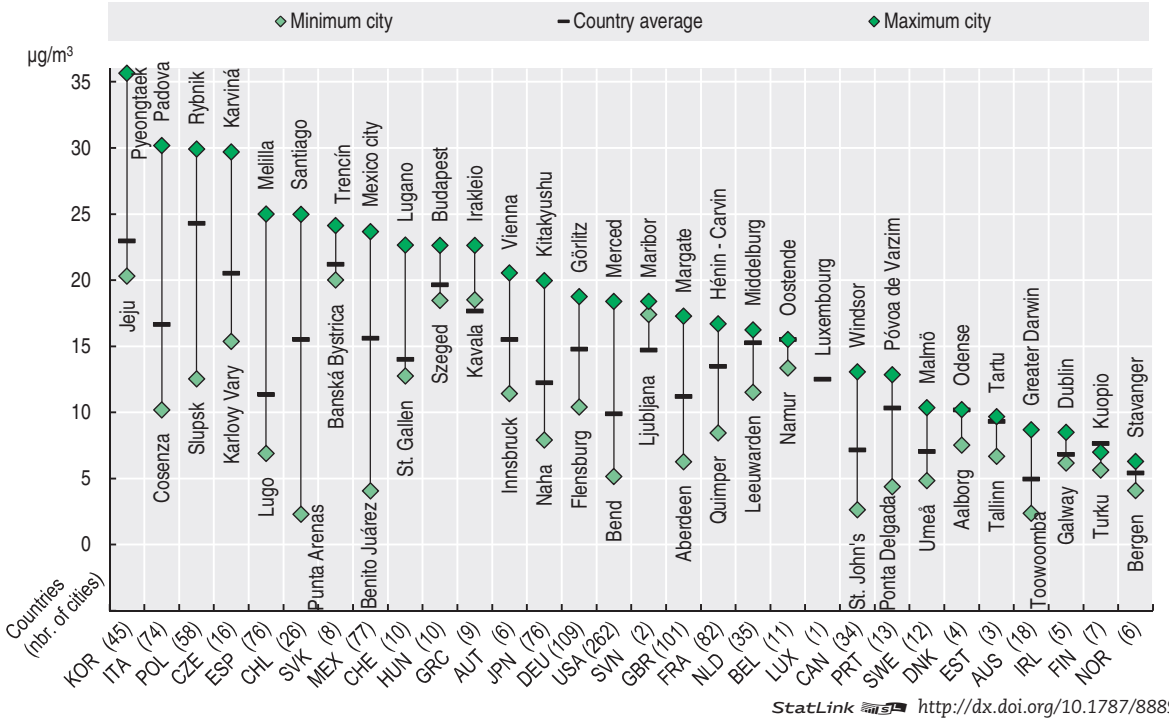
OECD (2012), *Redefining "Urban": A New Way to Measure Metropolitan Areas*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264174108-en*.

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OECD Regional Well-Being: *www.oecdregionalwellbeing.org*.

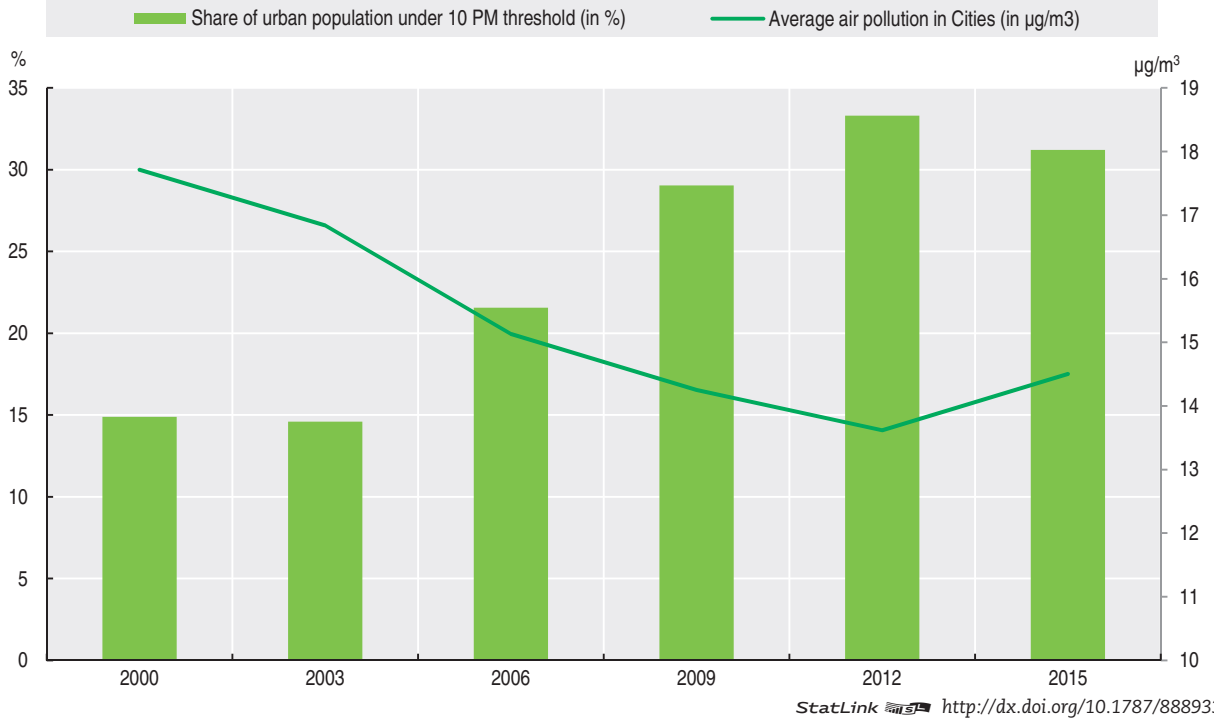
WHO (2013), Health Effects of Particulate Matter: Policy implications for countries in Eastern Europe, Caucasus and Central Asia, *www.euro.who.int/__data/assets/pdf_file/0006/189051/Health-effects-of-particulate-matter-final-Eng.pdf*.

4.20. Urban differences in average exposure to air pollution, 2015



StatLink http://dx.doi.org/10.1787/888933818264

4.21. % of population exposed to low levels of air pollution and average exposure to PM2.5 in cities



StatLink http://dx.doi.org/10.1787/888933818283





5. SUBNATIONAL GOVERNMENT FINANCE AND INVESTMENT

Subnational government spending

Subnational government expenditure by category

Subnational government expenditure by economic function

Spending responsibilities across levels of government

Subnational government investment

Subnational government investment by function

Subnational government investment: Trends and challenges

Subnational government revenue

Subnational government debt

The data contained in Chapter 5 are derived mainly from the OECD National Accounts, harmonised according to the new standards of the System of National Accounts (SNA) 2008. Eurostat and International Monetary Fund (IMF) data were also used. General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government i.e. regional and local governments and related public entities, and social security funds. Data are consolidated within these four sub-sectors, as well as within each subsector (neutralisation of financial cross-flows). Subnational governments (SNG) are defined as the sum of state government (relevant only for countries having a federal or quasi-federal system of government) and local (regional and local) governments. For the United States, there is no breakdown available at subnational level between local and state government data.

Subnational government spending

Subnational governments account for 40% of public expenditure, corresponding to 16% of GDP, a proportion that has increased in recent decades for most countries.

In 2016, subnational government (SNG) expenditure stood at USD 6 820 per capita on average in the OECD area, accounting for 16.2% of GDP and 40.4% of total public expenditure (Figure 5.1). Among OECD countries, the SNG share of total public expenditure varied from less than 8% in Greece and Ireland, to 76.2% in Canada. SNG spending may vary according to whether the country is federal or unitary, its size and territorial organisation, the level of decentralisation and the nature of responsibilities for certain sectors (Figure 5.1).

In federal countries, SNG expenditure reached USD 8 940 per capita, which account for 19.2% of GDP and 50.0% of public expenditure. In Canada, the value was USD 14 140 per capita, i.e. 31.6% of national GDP. In federal countries, the share of expenditure carried out by the local government compared to that of state government varied in 2016: while 47% of SNG expenditure is carried out by municipalities in Austria and 38% in Germany, municipalities represented only 14% of SNG expenditure in Australia and 16% in Mexico (Figure 5.2).

In unitary countries, local government expenditure is lower than in federal countries, representing on average USD 4 250 per capita, or 9.2% of GDP and 28.7% of public expenditure in 2016. While in Chile, Greece, Ireland, New Zealand and Turkey local governments have limited competencies and spending capacity, in Japan and European Nordic countries local expenditure amounts for a significant share of public expenditure. In Denmark, for example, SNG expenditure amounts to USD 17 070 per capita (higher than in Canada), corresponding to 34.8% of GDP and 65.0% of public expenditure, which is primarily due to the fact that municipalities administer a number of social security transfers.

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government i.e. regional and local governments and related public entities; and social security funds. Data are consolidated within these four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Expenditure comprises: "current expenditure" and "capital expenditure" (see Annex D for a detailed definition).

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA). Data in USD use Purchasing Power Parities.

SNG spending responsibilities have changed over the past 20 years, notably as a result of decentralisation processes that have transferred responsibilities to the subnational level in sectors such as education, health, social protection, economic development, urban and spatial planning, etc. This was the case in Spain, Sweden, Denmark, Finland, Belgium, Germany and Poland. In Belgium, the significant increase of the weight in GDP (6 percentage points) and in public expenditure (11 points) is explained by the implementation of the 6th State reform of 2011 (in effect since 2014), which has devolved new responsibilities from the federal government to the regions and communities. Some OECD countries, however, have recentralised and thus the share of SNG expenditure has decreased over the last 20 years and especially since the crisis (e.g. Ireland, Hungary) (Figure 5.3).

The share of SNG expenditure as an indication of spending autonomy should be interpreted with caution. While it often provides a valuable macroeconomic overview of the level of decentralisation, it can also lead to an overestimation of subnational expenditure autonomy. In fact, it does not always assess the real degree of decision-making power and action that SNGs have in terms of spending. In some countries, the subnational "spending autonomy" can be restricted because of mandatory spending (acting as "paying agent" for example for teachers' salaries or social security benefits), regulatory constraints or budget norms.

Source

OECD (2018), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en* and estimates from IMF Government Statistics for Australia and Chile.

OECD (2018), "Subnational Government Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2016: National Accounts; Levels of government; 2015: Mexico, New Zealand and Turkey.

Further information

OECD (2018), *Subnational Governments in OECD Countries: Key data* (brochure)

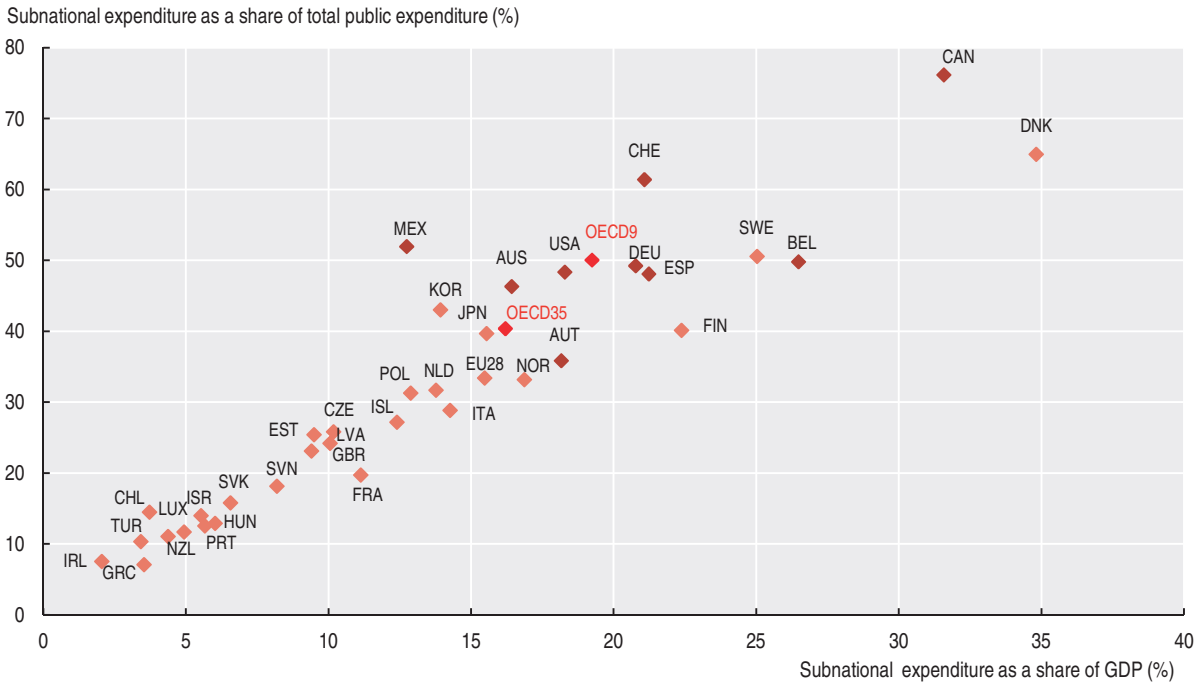
Figure notes

5.1: Federal countries are in dark brown markers.

5.3: Iceland 95-2016, EU28 2000-2016, Mexico 2003-2016, Japan: 2005-2016, New Zealand 1995 -2015. No data for Australia and Turkey due to lack of time-series.

OECD9 and OECD26 refer to average for OECD federal countries for OECD unitary countries.

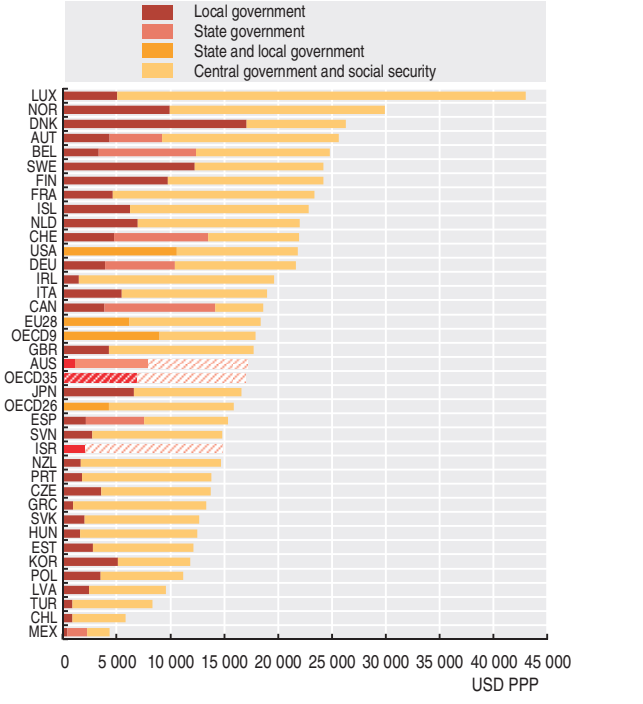
5.1. Subnational government expenditure as a percentage of GDP and total public expenditure, 2016



Note: Federal countries: dark brown markers.

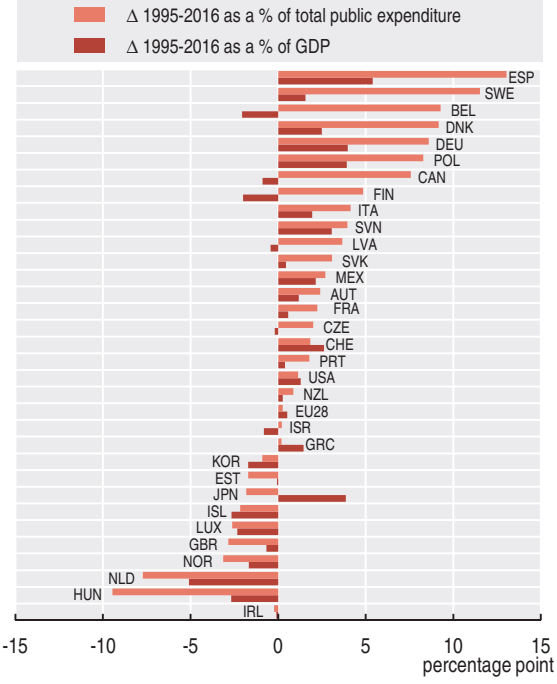
StatLink http://dx.doi.org/10.1787/888933818302

5.2. Public expenditure per capita by level of government (USD PPP, 2016)



StatLink http://dx.doi.org/10.1787/888933818321

5.3. Changes in subnational expenditure, as a % of total public expenditure and of GDP (1995-2006)



StatLink http://dx.doi.org/10.1787/888933818340

Subnational government expenditure by category

Subnational governments account for almost 50% of public procurement in the OECD.

The importance of subnational governments (SNGs) in the economy is particularly evident when considering their role as employers. Staff spending is the largest expense in subnational budgets, representing on average 36.0% of expenditure in the OECD area, and ranging from less than 20% in New Zealand and Turkey to more than 50% in Norway, Slovak Republic and Chile (Figure 5.4). High budget shares for staff spending may reflect the fact that SNGs in several countries have the responsibility, delegated from the central government, for the payment of public workers' salaries, such as teachers, medical staff or social workers. On average in the OECD area, SNGs undertook approximately 63% of public staff expenditure in 2016. This average masks different situations between federal countries (77%) and unitary countries (43%), from less than 10% in Ireland, New Zealand and Turkey to more than 84% in Switzerland and Canada (Figure 5.5).

SNGs also play a significant role in public procurement through the purchase of goods and services for intermediate consumption (equipment and supplies, maintenance and repairs, energy, communication and information technology, consulting, etc.), the purchase of social services via market producers and the commissioning of public works, often to local small and medium-sized enterprises. In 2016, SNGs accounted for almost 50% of public procurement in the OECD, almost 62% in federal countries and 38% in unitary countries (Figure 5.6). Among public procurement, intermediate consumption expenditure and gross fixed capital formation represented respectively 21% and 11% of SNG spending (see section on investment for further details).

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government i.e. regional and local governments and related public entities; and social security funds. Data are consolidated within these four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Expenditure comprises: "current expenditure" and "capital expenditure" (see Annex D for a detailed definition).

Public procurement expenditure is defined as the sum of intermediate consumption, gross fixed capital formation and social transfers in kind via market producers.

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (unweighted average, arithmetic mean, OECD UWA).

Finally, SNGs are a major actor for social inclusion at local and regional levels as they provide a range of welfare benefits to households and individuals (old age, family, sickness, disability, health, unemployment, housing, youth, poverty alleviation, etc.). Current social expenditure represented 17% of their spending in 2016 on average in the OECD (Figure 5.4). This figure attains 39% in Denmark (where the majority of social security expenditure passes through the municipalities), 28% in Germany (for the local level only) and 25% in Ireland (mainly housing benefits) and United Kingdom. In contrast, local governments have no or only a minor role in social protection in countries like New Zealand, Czech Republic, Luxembourg, Slovak Republic, Mexico or Chile (less than 2% of their spending in 2016).

"Spending indicators" should be interpreted with caution. They tend to overestimate the level of decentralisation, as subnational spending autonomy is often restricted by mandatory expenses in the case of shared or delegated competences, regulatory constraints, centrally imposed standards on local public service delivery (quantity and quality, cost, etc.) or on public procurement, civil service obligations or budget discipline (e.g. budget balance targets). In many cases, SNGs act simply as paying agents on behalf of the central government, for example for the payment of public staff wages or social benefits, with little or no decision-making power or room for manoeuvre.

Source

OECD (2018), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en* and estimates from IMF Government Statistics for Australia and Chile.

OECD (2018), "Subnational Government Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2016: National Accounts; Levels of government; 2015: Mexico, New Zealand and Turkey.

Further information

OECD (2018), Subnational Governments in OECD Countries: Key data (brochure)

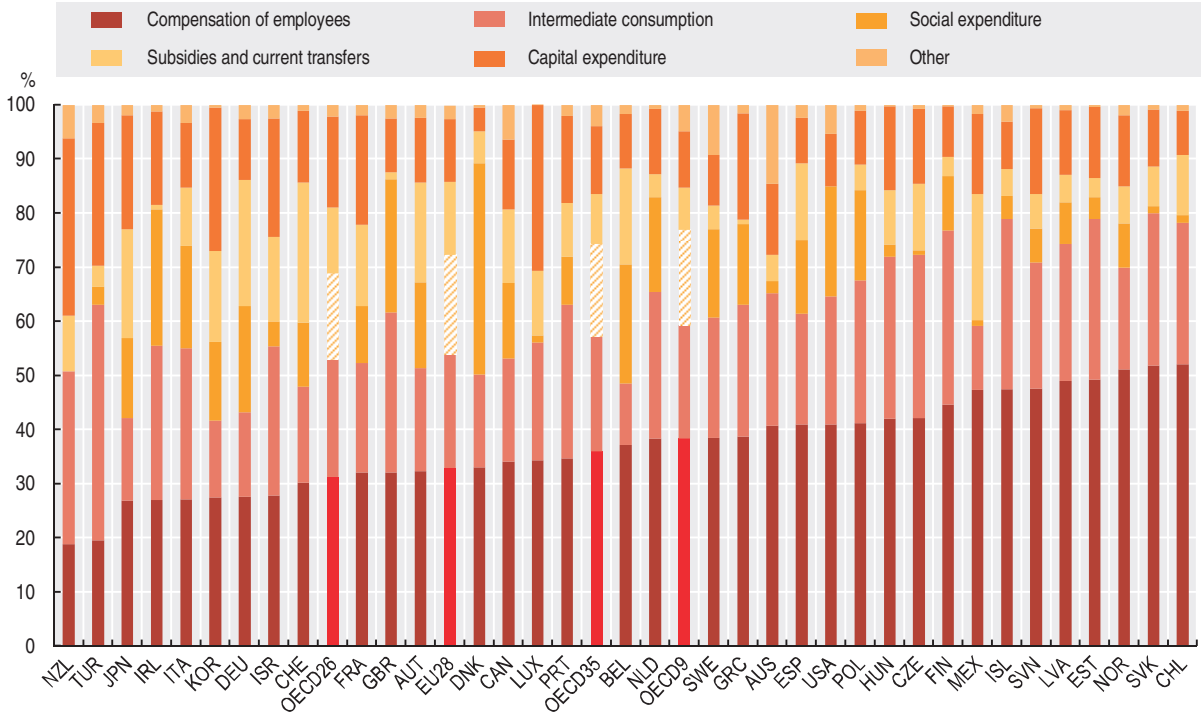
Figure notes

5.4: The "other" category includes taxes and financial charges.

5.6: Public procurement weighted averages do not include Australia or Chile for the OECD average.

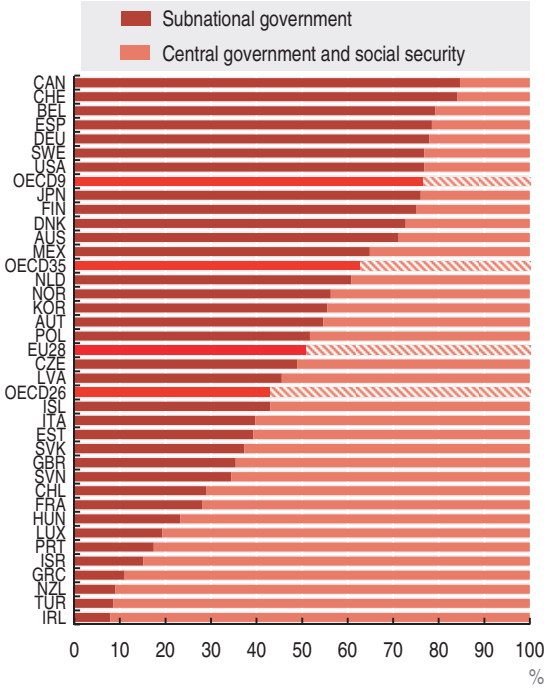
OECD8/OECD9 and OECD25/26 refer to the average for OECD federal countries for OECD unitary countries.

5.4. Breakdown of subnational government expenditure by category, 2016



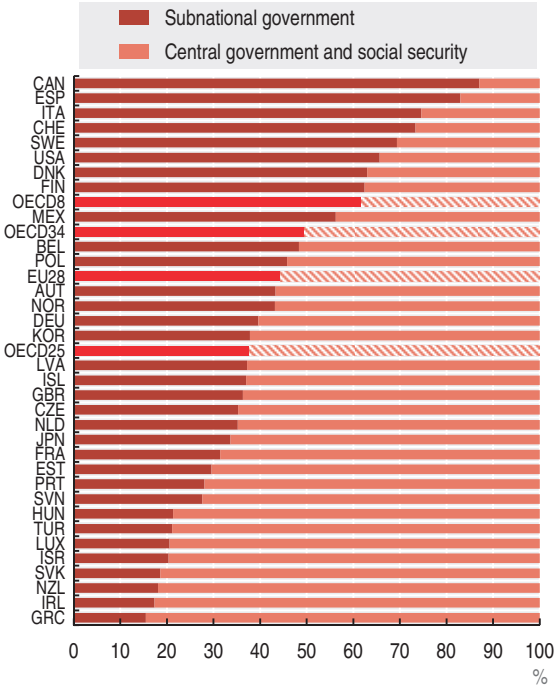
StatLink http://dx.doi.org/10.1787/888933818359

5.5. Subnational staff expenditure as a % of total public staff expenditure in 2016



StatLink http://dx.doi.org/10.1787/888933818378

5.6. Subnational government procurement as a % of total public procurement in 2016



StatLink http://dx.doi.org/10.1787/888933818397

Subnational government expenditure by economic function

Consuming almost one-quarter of total spending, education is the largest spending sector for subnational governments, followed by health and transport.

The breakdown of subnational expenditure by economic function provides a measure of the role of subnational governments (SNGs) in economic functions. Education represents the largest sector in overall SNG expenditure, i.e. 25% of SNG expenditure on average in the 32 OECD countries where data were available in 2015 (i.e. 4% of GDP) (Figure 5.7 and Figure 5.8). In the Slovak Republic, Slovenia, Estonia, Israel and Latvia, spending on education exceeded 35% of local budgets, and in Latvia it was 41%. As a percentage of GDP, the highest ratios are found in Sweden (5.1%), United States (5.7%), Switzerland (5.6%) and Belgium (7.3%).

Health is the second highest budget item, accounting for 18% of SNG expenditure (i.e. 2.9% of GDP). The average, however, hides wide variations across counties. Health spending exceeded 25% of subnational budgets in Australia, Austria, Spain, the United States, Finland, and Sweden, reaching 48% in Italy.

General public services (administration) and social protection sectors represent in equal share the third largest subnational budget item (14% of subnational spending and around 2.3% of GDP). Social protection spending, which includes both current and capital social expenditure, reaches between 25-35% of subnational spending in Germany, Finland, Ireland, Japan, Norway, Sweden, the United Kingdom and even 56% in Denmark. As a percentage of GDP, social protection spending exceeds 6% in Finland, Sweden, Belgium and especially Denmark where it amounts to 19.7% of GDP.

Expenditure in transport, communication and other economic interventions (economic affairs) represented 13.6% of subnational spending in the OECD, although this share was above 20% in Ireland and New Zealand.

Public order, safety and defence expenditures accounted for 6.9% of subnational expenditure and 1.1% of GDP in the OECD on average. This category includes mainly local and regional police services, fire-protection, civil protection and emergency services.

Recreation, culture and religion accounted for 3.0% of SNG expenditure and 0.5% of GDP in the OECD on average, but more than 10% in Greece, Israel, New Zealand, Luxembourg, and Iceland and above 1% in Germany, the Netherlands and Belgium. In fact, in Iceland in particular, it reached 16.4% of local budget and nearly 1.9% of GDP.

Spending on housing and community amenities accounted for around 2.7% of subnational expenditure and 0.4% of GDP in the OECD on average. This function comprises various sub-sectors such as supply of potable water, public lighting, urban heating, housing (construction, renovation and acquisition of land) and urban planning and facilities. It accounted for more than 10% of subnational spending in Hungary, New Zealand, Ireland and up to 17% in Turkey and more than 0.8% of GDP in Korea, Hungary and Latvia.

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government i.e. regional and local governments and related public entities; and social security funds. Data are consolidated within these four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Expenditure (current and capital) by economic function follows the Classification of the ten Functions of Government (COFOG): general public services; defence; public order and safety; economic affairs; environmental protection; housing and community amenities; health; recreation, culture and religion; education; and social protection.

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA).

Source

OECD (2018), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*. Estimates from the IMF Government Finance Statistics for Turkey and New Zealand.

OECD (2018), "Subnational Government Finance", OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2015: National Accounts; levels of government.

Further information

OECD (2018), Subnational Governments in OECD Countries: Key data (brochure).

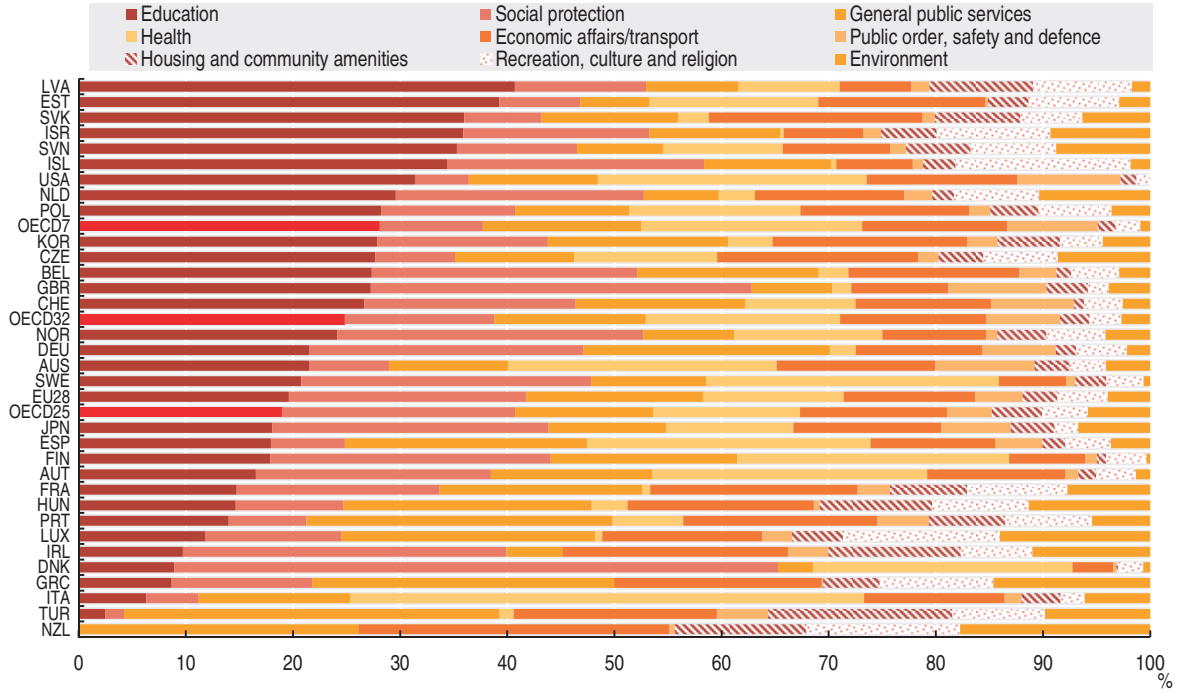
Figure notes

5.7 and 5.8: No data for Canada, Mexico and Chile. For the United States, data showed in the function "Housing and community amenities" include the "environment protection" function data.

OECD7 and OECD25 refer to average for OECD federal countries for OECD unitary countries.

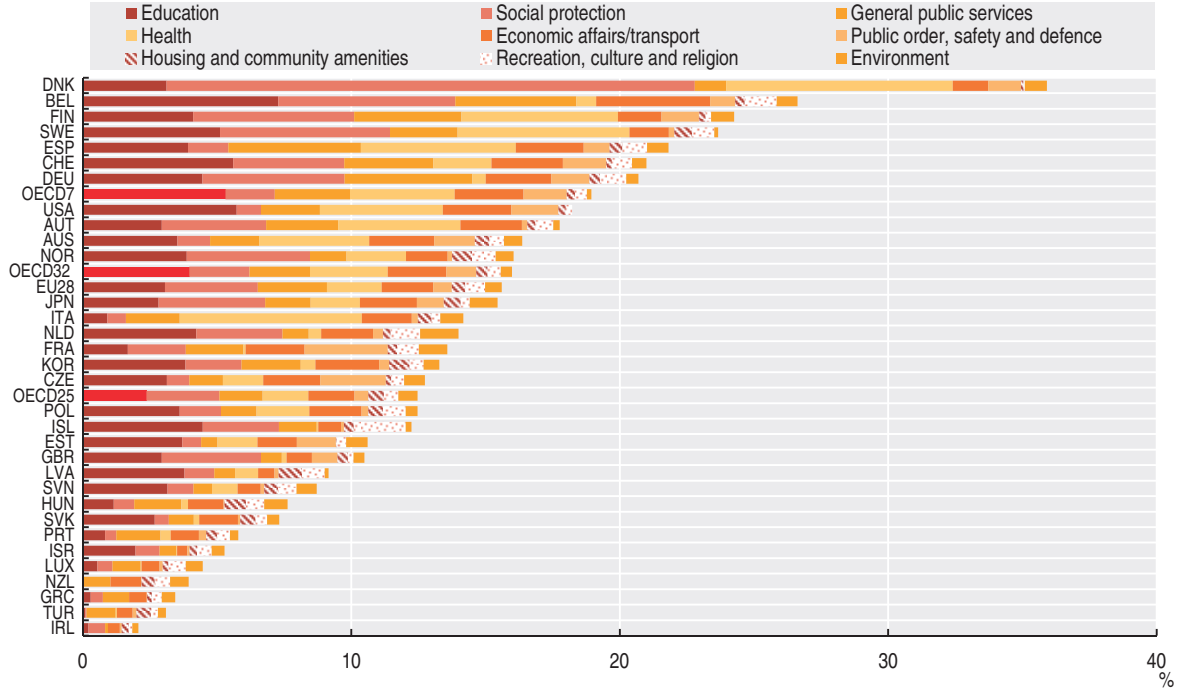
5.7. Breakdown of subnational government expenditure by function (COFOG), 2015

As a % of subnational government expenditure



StatLink http://dx.doi.org/10.1787/888933818416

5.8. Subnational government expenditure by function as a percentage of GDP, 2015



StatLink http://dx.doi.org/10.1787/888933818435

Spending responsibilities across levels of government

Subnational governments account for more than 60% of public spending in the areas of culture, housing, and environmental protection.

The distribution of competencies across levels of government in a country can be measured by the proportion of subnational spending by sector. However, the assignment of responsibilities to SNGs does not imply that the latter have full autonomy in exercising those responsibilities. Education is a shared competency across levels of government. As a share of total public spending on education, subnational expenditure on education represented 47% on unweighted average in the OECD in 2015. It is above this average in 18 countries (Figure 5.9, panel A).

In most countries, SNGs are responsible for construction and maintenance of educational infrastructures and the financing of school-related activities, commonly for the primary level schools. There are however exceptions, such as in New Zealand, Turkey, Ireland or Greece where education is provided by central government entities and local governments have a negligible role in this area. The same frequently applies to secondary schools, as well. In other countries, SNGs are also in charge of paying the salaries of administrative and technical staff and teachers. In this case, local governments have little control over their budget in an area regulated by the central government level. By contrast, in Spain, Germany, Switzerland, the United States and Belgium, subnational educational expenditure accounted for more than 80% of public spending in this sector. They are all federal countries, with state government having a high level of autonomy in educational matters, including vocational teaching and higher education (universities). Finally, in some countries, education is decentralised directly at the level of education institutions, which may be independent special-purpose entities (e.g. school districts in the United States and school boards in Canada).

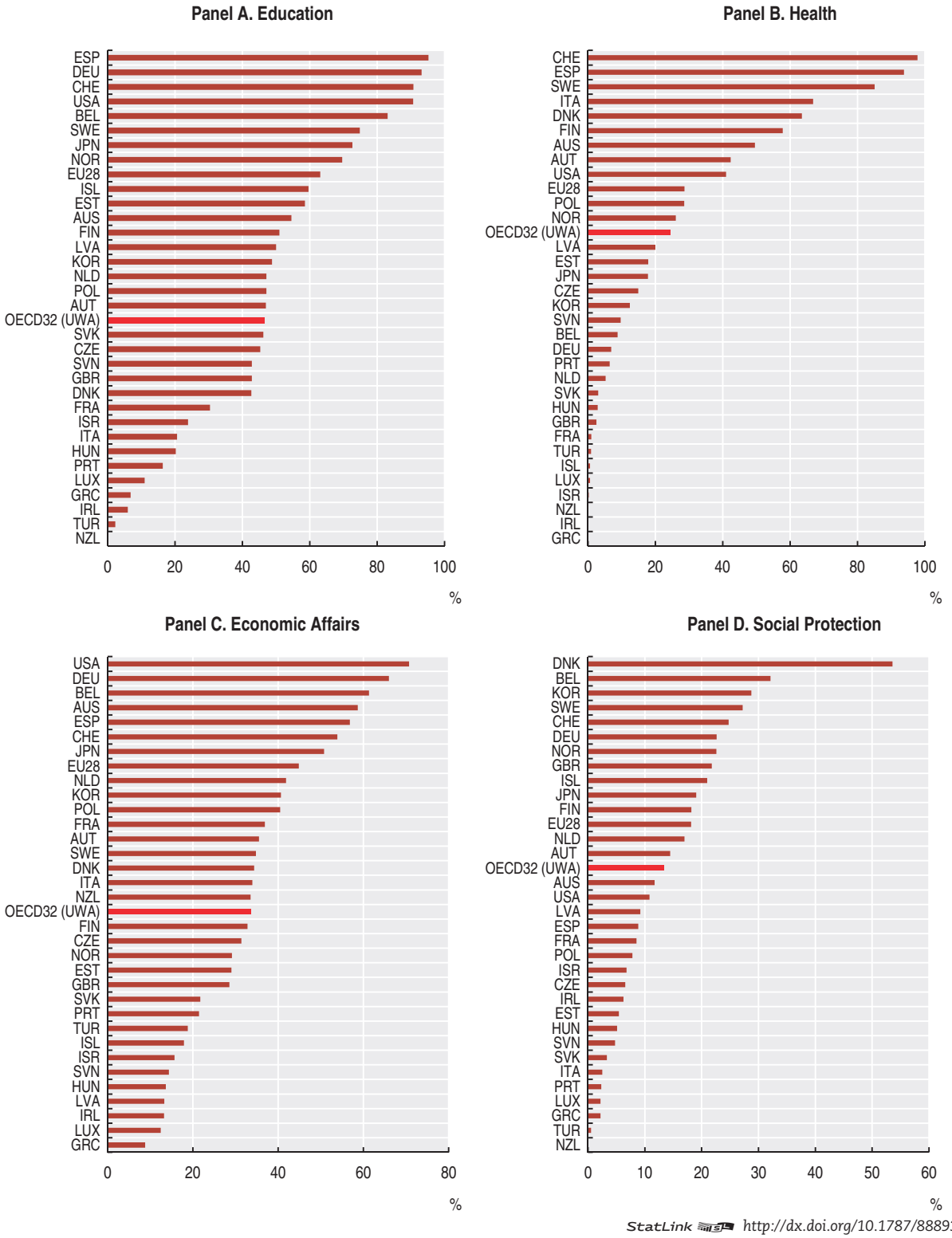
In the health sector, subnational expenditure accounted for 24% (unweighted average) of public health spending across OECD countries in 2015 (Figure 5.9, panel B), yet there are significant differences from one country to the next. Health remains a highly centralised responsibility in numerous countries, with subnational governments spending less than 10% of the public outlay in 16 countries, and even less than 1% in eight countries, including Greece, Ireland, New Zealand, Israel, Luxembourg, Turkey and France, among others. On the other hand, subnational health spending exceeds 85% of total public health spending in Sweden, Spain and Switzerland. Wide responsibilities for planning, organising, delivering and financing healthcare services and infrastructure are decentralised to the municipal level (primary care centres) but especially to the regional level (hospitals).

SNGs accounted for approximately 34% of public spending on economic affairs on unweighted average in the OECD in 2015, more than 50% in Japan, Switzerland, Spain, Australia, Belgium, Germany, and the United States where it reached 71% (Figure 5.9, panel C). Transport is the main component of this area, representing 73% of economic affairs expenditure on unweighted average in 22 OECD countries for which data are available, and even more than 80% in nine countries. This sector encompasses a wide range of activities from the definition of policies, regulations and standards, to financing, construction, maintenance and administration. Such activities can cover transport networks, public transport, facilities and services in various sub-sectors and at various geographic scales.

Subnational social expenditure corresponded to 13% of total public social spending on unweighted average in the OECD (Figure 5.9, panel D). In most OECD countries, social protection and benefits are mainly provided by the central government, social security bodies or by insurance institutions. Only Denmark stands out from the other countries with a ratio of 54% as local governments are responsible for the administration of cash benefits. However, in this area, there is a significant disconnect between the large share of decentralised social expenditures and the real power of Danish municipalities over them. This is because social protection schemes are largely determined by regulations and standards set at the central level. Other countries have a high ratio of subnational intervention such as Belgium (especially since the 6th State Reform), Korea and Sweden.

5.9. Subnational expenditure: education, health, economic affairs, social protection

% of total public expenditure by economic function, 2015



StatLink http://dx.doi.org/10.1787/888933818454

Spending responsibilities across levels of government

SNGs are key public actors in providing (sometimes exclusively) housing and community services, which is one of their major functions. Subnational government expenditure amounted to 72% of public spending in the area of housing and community amenities on unweighted average in the OECD in 2015, and more than 80% in 14 countries (Figure 5.10, panel A). Community development is the biggest line item of this sector (29% of spending in 21 OECD countries for which data are available), followed by housing development and water supply (24% each) and street lighting (13%). In these fields, SNGs play a major role in Sweden, Slovenia, Spain, Norway, Switzerland, Estonia, Belgium, and Israel. In the social housing sector, there has been a widespread privatisation process, which reduced subnational involvement, particularly in central and eastern European countries.

The share of SNGs in total public environmental expenditure is also sizeable reaching close to 65% in the OECD on unweighted average in 2015 (Figure 5.10, panel B). It confirms the key role of SNGs in this field, especially in Italy, Spain, Turkey and the Netherlands where subnational spending in environmental protection represented more than 90% of total public spending in 2015. On average, in 22 OECD countries for which data are available, 52% of subnational environmental spending was dedicated to waste management, 26% to waste water management, 8% to the protection of biodiversity and landscape and 7% to pollution abatement.

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government i.e. regional and local governments and related public entities; and social security funds. Data are consolidated within these four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Expenditure (current and capital) by economic function follows the Classification of the ten Functions of Government (COFOG): general public services; defence; public order and safety; economic affairs; environmental protection; housing and community amenities; health; recreation, culture and religion; education; and social protection.

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA).

In some sectors (e.g. waste, sewerage, parks and green spaces) the competence is almost fully devolved to local governments or specific decentralised functional bodies (e.g. water boards in the Netherlands). It is also often outsourced to agencies, external entities or private providers through public-private partnership contracts (e.g. in France).

Subnational expenditure dedicated to recreation, culture and religion amounted to 60% of public expenditure in the same area on unweighted average in the OECD countries, even exceeding 90% in Switzerland, Japan, Germany and Belgium (Figure 5.10, panel C). In contrast, central government remains the main public funder in this area in Ireland, the United Kingdom, and Hungary.

In most OECD countries, public order functions remain mainly the central government's responsibility. SNG expenditure accounts for only 26% of public spending in this area on unweighted average (Figure 5.10, panel D). However, federal countries, such as Australia, the United States, Germany and Switzerland but also a unitary country (Japan) record particularly high ratios with more than 80% of total public spending in this area.

Source

OECD (2018), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*. Estimates from the IMF Government Finance Statistics for Turkey and New Zealand.

OECD (2018), "Subnational Government Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2015: National Accounts; levels of government.

Further information

OECD (2018), *Subnational Governments in OECD Countries: Key data* (brochure).

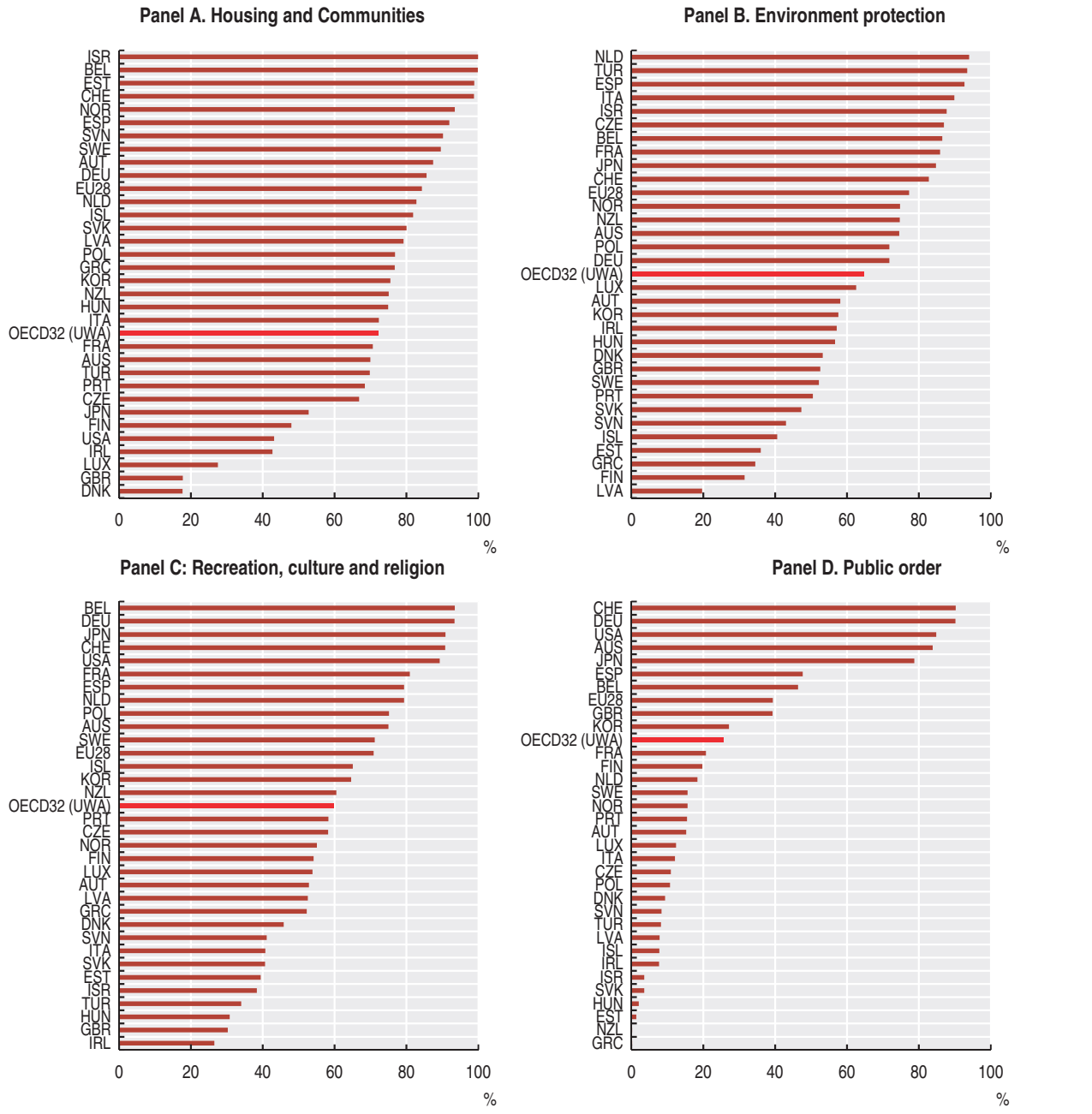
Figure notes

No data for Canada, Mexico and Chile. For the United States, data showed in the function "Housing and community amenities" include the "environment protection" function data.

5.9: OECD average is unweighted. The total of public spending is non-consolidated.

5.10. Subnational expenditure: Housing, Environment, Recreation, Public order

% of total public expenditure by economic function, 2015



StatLink http://dx.doi.org/10.1787/888933818473

Subnational government investment

Subnational governments are key investors that account for almost 60% of total public investment.

In most OECD countries, subnational governments (SNGs) have a key role in public investment. In 2016, they carried out near 57% of public investment in the OECD area. This ratio tends to be higher in federal countries (70% on average for the nine OECD federal countries) than in unitary countries (51% on average for the 26 unitary countries). Combining investments by the federated states and by local governments, subnational investment exceeds 70% of public investment in Australia and Mexico, and more than 85% in Canada and Belgium. At the other end of the spectrum, the role of subnational government in public investment is particularly low in Greece, Ireland and especially Chile, where the local share is 13% (Figure 5.11).

In the vast majority of OECD countries, public investment is a shared responsibility across levels of government, either through shared policy competencies or joint funding arrangements. SNG investment accounted for 1.7% of GDP in the OECD in 2016 (total public investment was 3% of GDP) a share that was above 2.5% of GDP in Japan, Korea and Canada but less than 1% of GDP in Chile, Ireland, Greece, the Slovak Republic, Hungary, Turkey, the United Kingdom, Iceland, and Portugal. Comparing the share of subnational investment in public investment and its contribution to GDP shows the particular involvement of subnational governments in public investment, in particular in Canada, Japan and Korea (Figure 5.11).

Per capita SNG investment in OECD countries averaged USD 727 in 2016, compared to USD 551 for the central government and social security sectors. It ranges from USD 68 in Chile to almost USD 1 538 in Canada, with high values of SNG investment per capita (above USD 1 000) found also in Australia, Sweden, the United States, Korea, Japan, Switzerland, Norway and Luxembourg (Figure 5.12).

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government (i.e. regional and local governments and related public entities); and social security funds. Data are consolidated within these four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Capital expenditure is the sum of capital transfers and investment. Gross fixed capital formation is the main component of investment (see Annex D for a detailed definition).

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA). Data in USD use Purchasing Power Parities.

In federal countries, local government investment per capita as a share of SNG investment per capita averaged 44% (unweighted average; there are no breakdown data for the United States). In unitary countries, the local government investment in public investment averaged 51%, but in countries such as Chile, Greece, Ireland or the Slovak Republic it was less than 20%.

On average, SNG direct public investment accounted for 10.7% of subnational expenditure in the OECD area in 2016. This value ranges from less than 7% in Austria, Germany, Spain and Denmark to more than 20% in Korea, Israel, Turkey, Luxembourg and New Zealand, which are for most of them among the most centralised OECD countries in terms of total spending (Figure 5.13). In fact, in the least-decentralised countries, subnational governments tend to be more investors than managers of public services, having few functions mobilising current expenditure.

By contrast, in countries where subnational governments carry out a large number of responsibilities involving significant staff spending, intermediate consumption or benefits, the relative weight of investment in total subnational expenditure may be low, such as in Denmark. In addition, it can vary a lot, from one year to another as investment is often an adjustment variable within budget. In Spain, for example, the weight of investment in subnational expenditure reached 13% in Spain before the 2008 crisis i.e. the double that the current level.

Source

OECD (2018), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*. and estimates from IMF Government Statistics for Australia and Chile.

OECD (2018), "Subnational Government Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2016: National Economic Accounts; levels of government.
2015: Mexico, New Zealand and Turkey.

Further information

OECD (2018), Subnational Governments in OECD Countries: Key data (brochure).

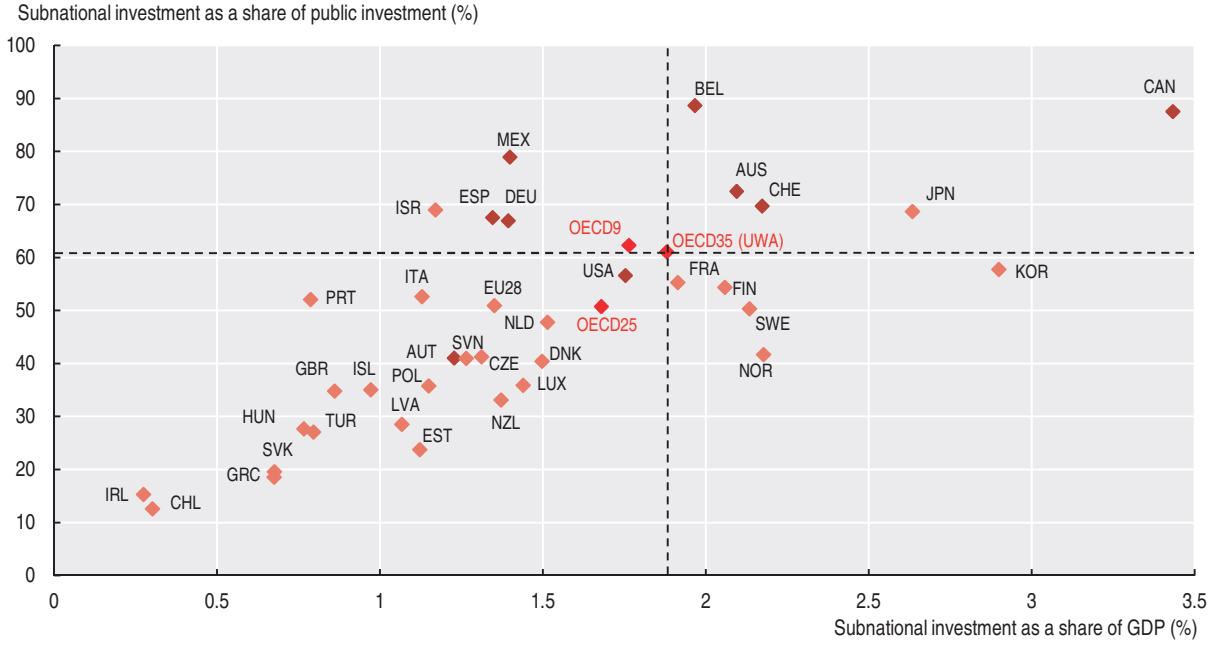
OECD (2014), Recommendation on Effective Public Investment Across Levels of Government – Implementation Toolkit, *http://www.oecd.org/effective-public-investment-toolkit/*.

OECD (2013), *Investing Together: Working Effectively across Levels of Government*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264197022-en*.

Figure notes

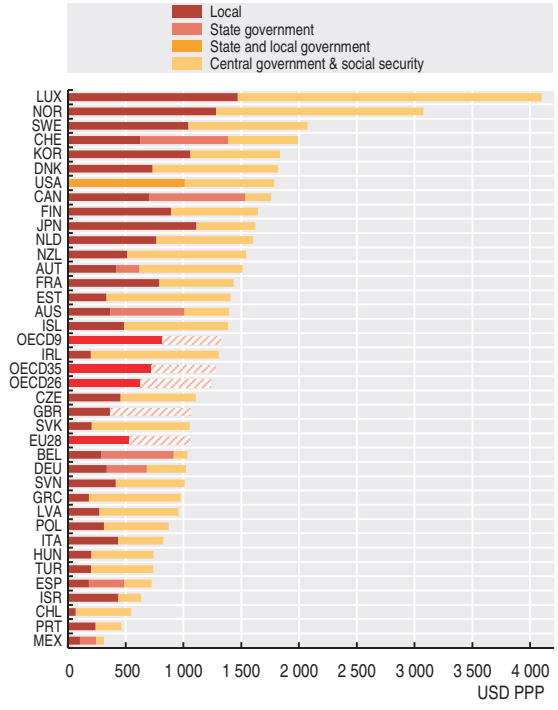
OECD9 and OECD26 refer to the average for OECD federal countries and to the average for OECD unitary countries, respectively.

5.11. Subnational government investment as a % of GDP and public investment, 2016



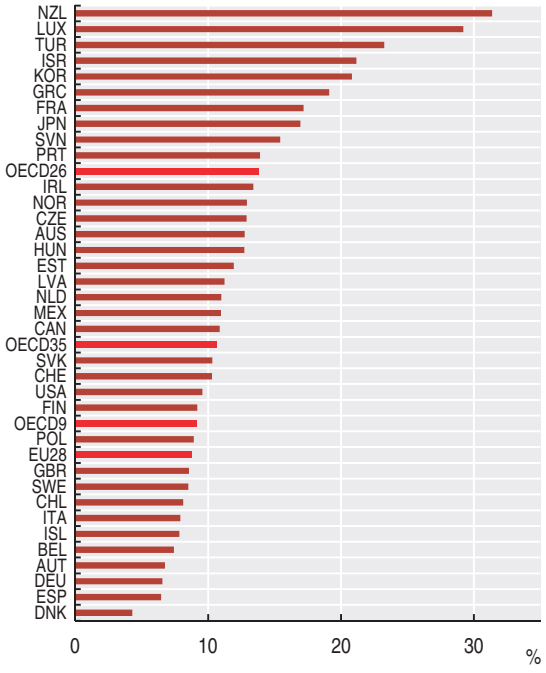
StatLink http://dx.doi.org/10.1787/888933818492

5.12. Public investment by level of government, 2016 (USD PPP per capita)



StatLink http://dx.doi.org/10.1787/888933818511

5.13. Subnational investment as a % of subnational expenditure, 2016



StatLink http://dx.doi.org/10.1787/888933818530

Subnational government investment by function

Accounting for almost 40% of total subnational investment, transport and economic affairs are the largest investment sectors in the OECD.

Economic affairs and transport were the priority sectors for subnational government investment in 2015, accounting for 39% of SNG investment on average in the OECD. Under this heading are transport, communications, economic development, energy, construction, etc. Transport systems, facilities and public transportation make up the bulk of investment in this category (around three-quarters), which comprises construction of roads (highways, local roads, bicycle paths, etc.), railways, water transport, air transport and airports, pipelines and other transport systems such as funiculars, cable cars, etc. In Australia, Ireland, Estonia and Greece, investment in economic affairs/transport represented more than 50% of subnational investment in 2015. By contrast, this sector is under-represented in Denmark, Slovenia, Sweden, Latvia and Hungary (less than 20% of subnational investment and even 12% in Hungary) (Figure 5.14).

The second priority sector for SNG investment in 2015 was education: 21% of SNG investment was made for new construction and major renovations of pre-elementary, primary, secondary and high schools, universities, adult vocational training centres, lodging and transport for pupils and students, etc. Subnational educational infrastructure investment was above 25% in Latvia, Norway, Israel, the United States and close to 44% in the United Kingdom. In Australia, Hungary, Portugal, Greece and Ireland, subnational governments seem to invest very little in education infrastructure.

Infrastructure in general public services (administration) represented nearly 10% of SNG investment in 2015 but more than 29% in Belgium and Switzerland. This category comprises mainly construction and improvement of public buildings (e.g. town and regional councils).

The fourth priority area of SNG investment in 2015 was housing and community amenities, which represented 8.5% of SNG investment. This sector comprises construction and remodelling of housing, including acquisition of land, potable water supply, street lighting, infrastructure for community development, etc. Subnational investment in that area exceeded 19% in Slovenia, Latvia, Korea and 24% in the Slovak Republic.

Subnational investment in environmental infrastructure (waste, sewerage, air pollution, climate protection, soil protection, noise, protection of biodiversity and landscape, parks and green spaces, etc.) amounted to 6.4% of SNG investment on average in the OECD in 2015. The share exceeded 15% in 10 countries and surpassed 22% in the Czech Republic, the Netherlands and reached 35% in Hungary and Slovenia.

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government i.e. regional and local governments and related public entities; and social security funds. Data are consolidated within these four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Capital expenditure is the sum of capital transfers and investment. Gross fixed capital formation is the main component of investment (see Annex D for a detailed definition).

Investment by economic function follows the Classification of the ten Functions of Government (COFOG): general public services; defence; public order and safety; economic affairs; environmental protection; housing and community amenities; health; recreation, culture and religion; education; social protection.

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA). OECD9 and OECD26 refer to the average for OECD federal countries and to OECD unitary countries, respectively. Data in USD use Purchasing Power Parities.

Source

OECD (2018), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*.

OECD (2018), "Subnational Government Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2015: National Economic Accounts; levels of government. COFOG Investment Data

Further information

OECD (2018), Subnational Governments in OECD Countries: Key data (brochure).

OECD (2013), Investing Together: Working Effectively across Levels of Government, OECD Publishing, Paris.

OECD (2014), Recommendation on Effective Public Investment Across Levels of Government – Implementation Toolkit, *http://www.oecd.org/effective-public-investment-toolkit/*.

Figure notes

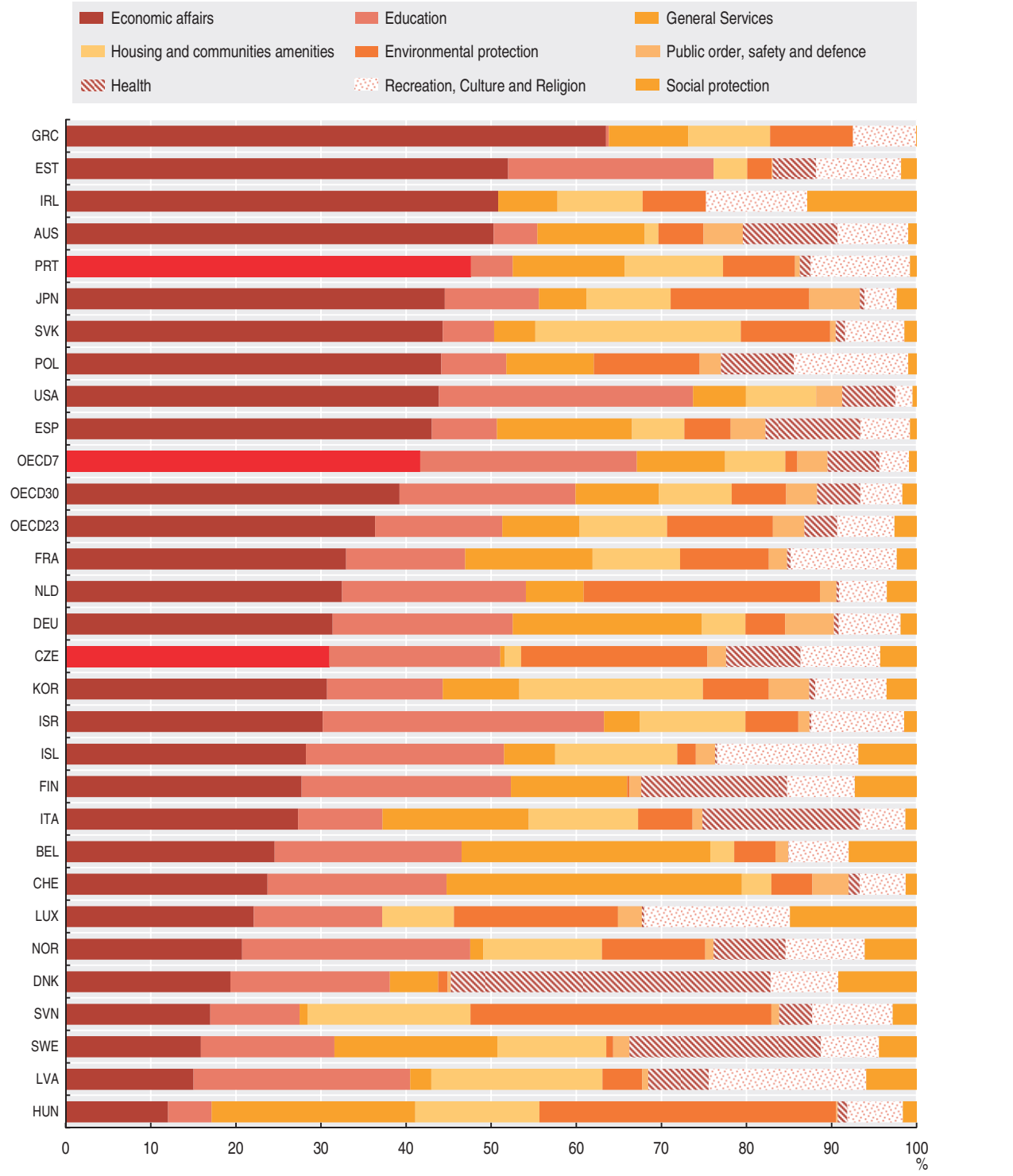
No data for Canada, Mexico, Chile, New Zealand, Turkey.

Other: defence; public order and safety; health; recreation, culture and religion; social protection.

For the United States, data showed in the function "Housing and community amenities" include the "environment protection" function data.

Due to negative values (disinvestment), some areas are not taken into account for the breakdown of investment by function: General public services in Luxembourg and Estonia; Housing and community in Denmark, Finland, Netherlands and Poland.

5.14. Breakdown of SNG investment by economic function as a % of total SNG investment, 2016



StatLink http://dx.doi.org/10.1787/888933818549

Subnational government investment: Trends and challenges

Since 2011 subnational investment has decreased by 1.1% per year, with higher decreases (-3.7% per year) across the European Union.

In many countries, subnational government (SNG) investment was particularly robust in the early years of the global financial crisis due to the involvement of subnational governments in stimulus plans and strong support from national governments. However, the deepening of the social and economic crisis and the adoption from 2010 onwards of national and subnational budget consolidation measures put severe strain on subnational finances. Public investment was thus cut back in a majority of OECD countries (Figure 5.15), and the fall has not entirely recovered despite some improvements since 2013.

Public investment continues to be one of the key budgetary adjustment variables. Between 2008 and 2016, SNG investment decreased by -1.1% per year in real terms in the OECD, and even more in the European Union, where the drop was -3.1% on yearly average. It contracted sharply in Iceland, Greece, Portugal, Spain and Latvia and more particularly in Ireland (Figure 5.16). Nonetheless, not all OECD countries followed this trend as investment increased in 13 countries over the years 2008 to 2016, in particular in Sweden, Norway and Chile. With respect to 2015, subnational investment fell by 1.8% in 2016 in the OECD, and even by 8.7% in the European Union. In Slovenia, Poland, Czech Republic, Slovak Republic and Hungary, the drop in subnational investment exceeded 35% in between 2015 and 2016. Fiscal consolidation has certainly played a role, but it not the only factor, especially in countries benefiting from cohesion funds, which are heavily dependent on EU Structural and Investment Funds (ESIF). According to EIB 2017, ESIF accounted for around 40% of public investment, or nearly 2% of GDP, in recent years in these countries. These later have thus suffered from a "cliff effect" suddenly turning negative after the 2015 deadline for payments under the last EU programming period (EIB 2017).

As a percentage of GDP, subnational investment also declined by 0.5 percentage points between 2008 and 2016 in the OECD on average (Figure 5.17 and Figure 5.18). A decline in subnational investment is observed in around two-thirds of OECD countries, with the highest decreases in Portugal, Poland, Iceland, Spain and Ireland (1.1 to 2.7 percentage points). By contrast, the contribution of subnational government investment to GDP significantly increased in Nordic countries, in particular Norway and Switzerland.

The proportion of subnational investment in total public investment also declined by 1.6 percentage points since 2008 (Figure 5.19). Such a trend was observed in two-thirds of the OECD countries. The decline was particularly strong in Poland, Iceland, Portugal, Hungary, Latvia and Ireland (between 10 percentage points to 39 points), resulting mainly from recentralisation processes especially in Ireland and Hungary, in addition to the effects of the crisis and consolidation policies.

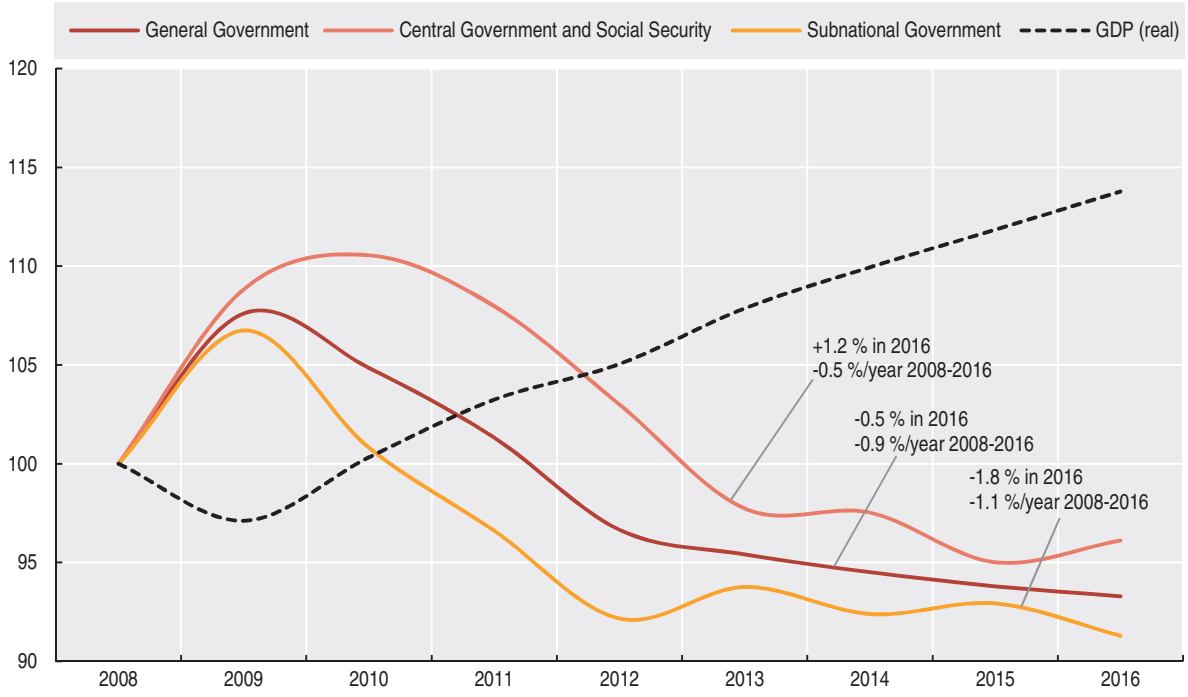
Source

OECD (2018), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*. Australia and Chile: estimates from IMF government statistics.

OECD (2018), "Subnational Government Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

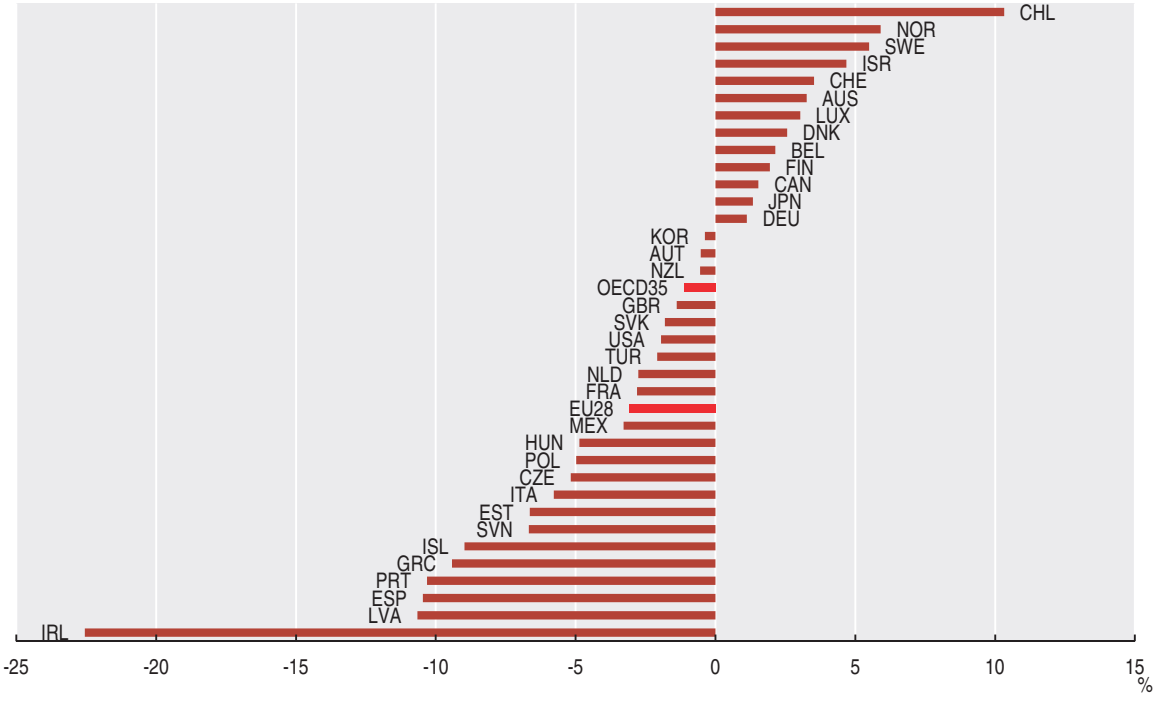
See Annex B for data sources and country-related metadata.

5.15. Public investment from 2008 to 2016 by level of government



StatLink http://dx.doi.org/10.1787/888933818568

5.16. Annual average change in subnational government investment between 2008 and 2016



StatLink http://dx.doi.org/10.1787/888933818587

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government i.e. regional and local governments and related public entities; and social security funds. Data are consolidated within these four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Capital expenditure is the sum of capital transfers and investment. Gross fixed capital formation is the main component of investment (see Annex D for a detailed definition).

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA). Data in USD use Purchasing Power Parities.

Reference years and territorial level

2016: National Economic Accounts; levels of government.
2015: Mexico, Turkey.

Further information

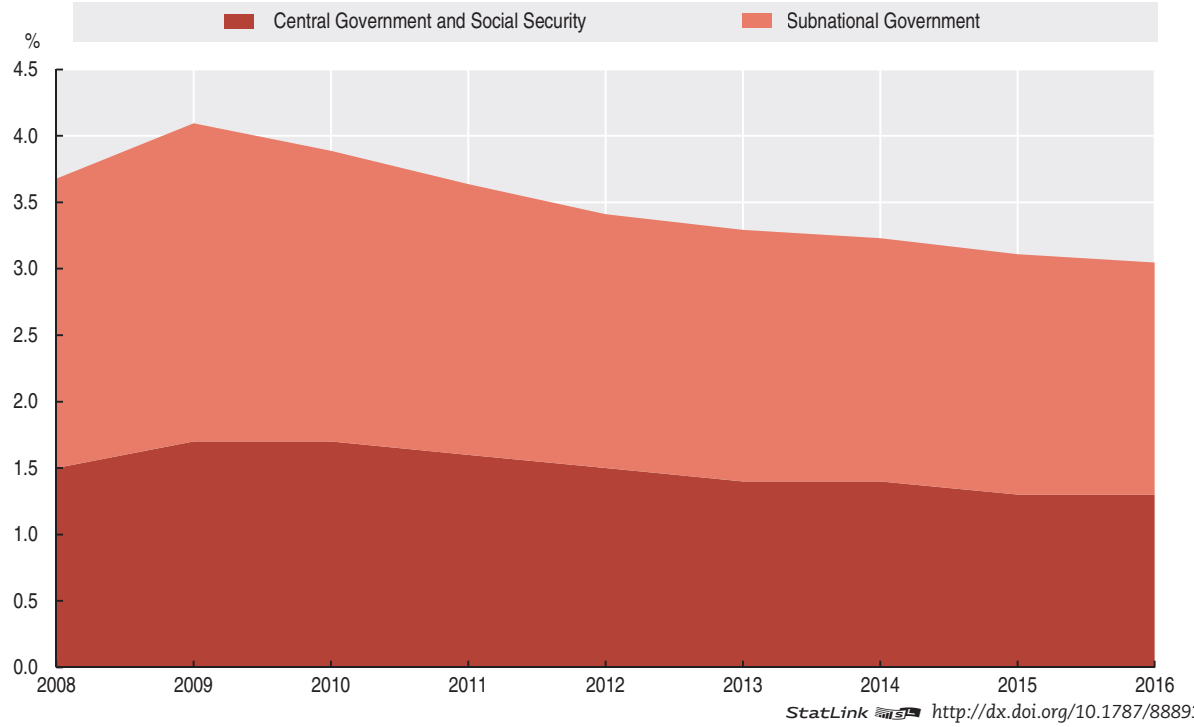
OECD (2018), Subnational Governments in OECD Countries: Key data (brochure).

OECD (2013), Investing Together: Working Effectively across Levels of Government, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264197022-en*.

OECD (2014), Recommendation on Effective Public Investment Across Levels of Government – Implementation Toolkit, *http://www.oecd.org/effective-public-investment-toolkit/*.

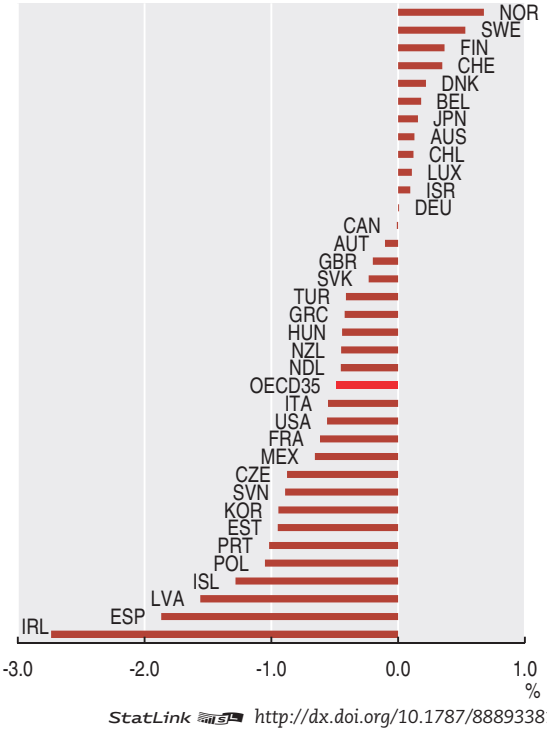
European Investment Bank (2017) Investment and Investment Finance in Europe: Financing productivity growth – 2016.

5.17. Change in subnational investment as a % of GDP in the OECD from 2008 to 2016



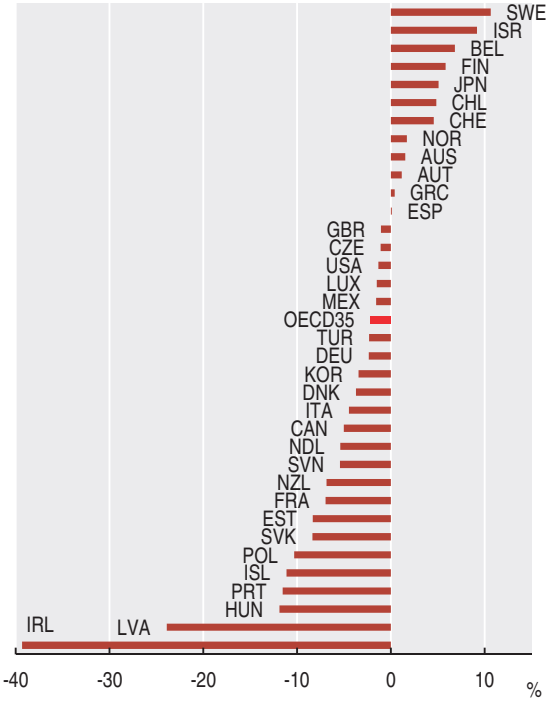
StatLink http://dx.doi.org/10.1787/888933818606

5.18. Change in subnational investment as a % of GDP between 2008 and 2016



StatLink http://dx.doi.org/10.1787/888933818625

5.19. Change in subnational investment as a % of public investment 2008 and 2016



StatLink http://dx.doi.org/10.1787/888933818644

Subnational government revenue

Almost half of subnational government revenues come from taxes, but this proportion varies largely across countries.

In 2016, subnational government (SNG) revenue represented around USD 6 680 per capita, 15.9% of GDP and 42.4% of public revenue on average in the OECD. There are two main sources of revenue: taxes (45% of SNG revenue in the OECD on average in 2016) and grants and subsidies (37%) (Figure 5.20). It is interesting to note that, on unweighted average, the proportions are reversed, grants and transfers being the first SNG revenue source (48% vs 36% for taxes). Revenue deriving from local public service charges (tariffs and fees), property income (sale and operation of physical and financial assets) and social contributions represented respectively 15%, 2% and 1% of SNG revenue.

Tax revenue includes both shared and own-source taxes. Therefore, it is not an indicator of tax autonomy. In fact, shared taxes are national taxes (usually based on personal or corporate income taxes, VAT or excise taxes) which are redistributed to subnational governments according to allocation criteria which are defined nationally with more or less possibility for subnational governments to intervene or negotiate.

The share of tax revenue in subnational revenue varies largely across countries. Taxes account for an important proportion in some federal countries, where tax revenue frequently comes from both own-source taxation and tax sharing arrangements between the federal government and state governments, including in some cases local governments (Germany, Switzerland, Spain and Canada).

In unitary countries, such as Iceland, Latvia, Sweden, New Zealand and France, tax revenue made up more than 52% of local revenue in 2016. At the opposite end, taxes amounted to less than 15% of local revenue in Turkey, the Netherlands, the Slovak Republic and Estonia.

A high share of tax revenue in subnational revenue does not imply a high level of tax revenue. While subnational tax revenue accounted for 7.1% of GDP in the OECD and 31.9% of public tax revenue in 2016, there are stark differences between countries (Figure 5.21). In 15 OECD countries, subnational tax revenue accounted for less than 10% of total public tax revenue and less than 1.5% of GDP, the lowest ratios being found in Estonia, Turkey, the Slovak Republic, Ireland and Greece. By contrast, subnational tax revenue ratios were particularly high as both a share of public tax revenue and GDP in Sweden, Finland, Switzerland, Germany and Canada. These high shares derive largely from personal income taxes (PIT), which are shared taxes in the three federal countries but also a local own-source tax in Finland and Sweden.

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government i.e. regional and local governments and related public entities; and social security funds. Data are consolidated within these four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Revenue comprises tax revenues, transfers (current and capital grants and subsidies), tariffs and fees, property income and social contributions. Tax revenue includes both own-source tax and shared tax (see Annex D for a detailed definition).

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA).

Source

OECD (2018), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*. Australia and Chile: estimate from IMF Government Finance statistics.

OECD (2018), "Subnational Government Finance", OECD Regional Statistics (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2016: National Economic Accounts; levels of government; 2015: Mexico, New Zealand, and Turkey.

Further information

OECD (2018), Subnational Governments in OECD Countries: Key data (brochure).

OECD (2018b) Maintaining the momentum of decentralisation in Ukraine.

Figure notes

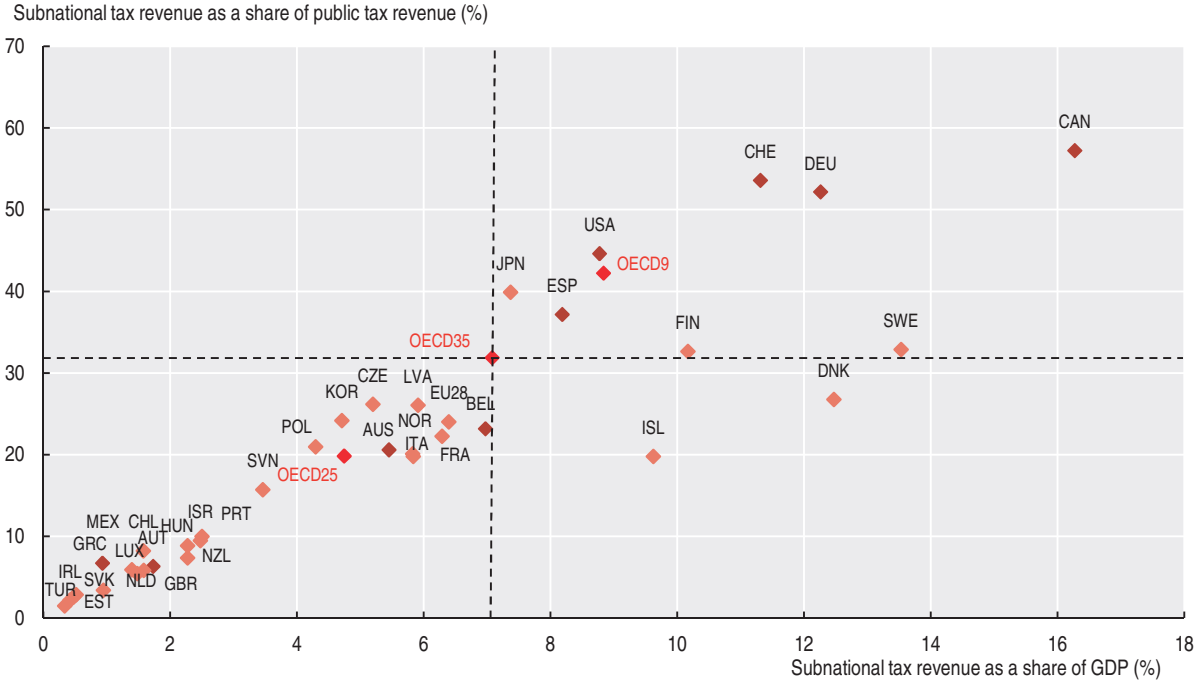
OECD9 and OECD26 refer to average for OECD federal countries for OECD unitary countries.

5.20. Structure of subnational government revenue, 2016 (%)



StatLink http://dx.doi.org/10.1787/888933818663

5.21. Subnational government tax revenue as a % of public tax revenue and as a % of GDP, 2016



StatLink http://dx.doi.org/10.1787/888933818682

Subnational government debt

Subnational government debt remains moderate, especially amongst OECD local governments that only borrow to finance investment.

The financial and economic crisis led to a substantial budget imbalances and much higher debt levels for SNGs in most OECD countries. At the end of 2016, the situation however had improved with a subnational deficit of about 0.3% of GDP on average in the OECD. Subnational outstanding gross debt accounted for 24.5% of GDP and 20.7% of total public debt in 2016 (Figure 5.22).

SNG outstanding debt is very unevenly distributed among OECD countries. It is higher in federal countries than in unitary countries: around 31% of GDP and 27% of public debt on average in the first case compared to 14.5% of GDP and around 12% of public debt in the second case.

In federal countries, the subnational debt is divided into the debt of the states and local governments. The share of states' debt tends to be higher than that of local governments (Figure 5.23), as – like central governments – they are not subject to the "golden rule". According to this rule, long-term borrowing is limited to investing in infrastructure and large facilities only. Local governments in most OECD countries (whether federal or unitary) are subject to this restriction. In addition, central or state governments set limits on local government indebtedness in most OECD countries.

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government i.e. regional and local governments and related public entities; and social security funds. Data are consolidated within these four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Fiscal balance is the difference between government revenues and expenditure. Gross debt includes the sum of the following liabilities: currency and deposits + debt securities + loans + insurance pension and standardised guarantees + other accounts payable. The SNA definition of gross debt differs from the one applied under the Maastricht Protocol (see Annex D for a detailed definition).

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA).

Amounting to approximately 67% of total debt on average in the OECD, "financial debt" (loans, debt securities and currency and deposits), as defined by the debt regulations set forth in the EU's Maastricht Protocol, represents the largest share of subnational government debt (Figure 5.24). In the OECD, debt securities represent the largest share of subnational debt (44% of total debt and 66% of financial debt) while loans amounted to 23% of total subnational debt and 44% of financial debt. This is explained by the weight of state government debt in federal countries, which comprises a high proportion of bonds (the United States, Canada and Germany). Debt securities is also widespread at the local level in some unitary countries (New Zealand, Japan, Norway, Korea, Iceland and Sweden), but, in the majority of unitary countries, issuing local bonds remains limited, or non-existent. As a result, loans are the most widespread form of external funding in unitary countries (58% of total local debt and 69% of financial debt).

Source

OECD (2018), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*. Australia: estimates from the IMF Government Finance Statistics.

OECD (2018), "Subnational Government Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2016: National Accounts; levels of government; 2015: Budget Balance of Mexico, New Zealand and Turkey; 2015: Debt of Israel; 2016 estimates SNA 2008, non-consolidated: debt of Switzerland, the United States, Iceland, Korea, and New Zealand.

Further information

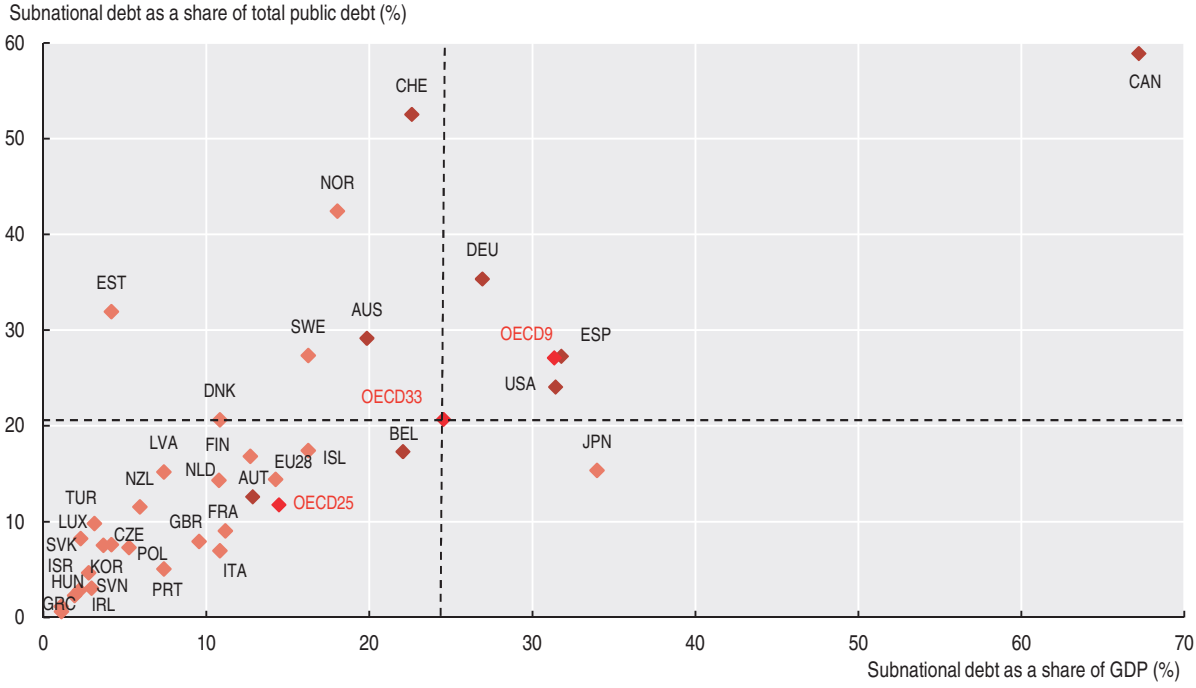
OECD (2018), Subnational Governments in OECD Countries: Key data (brochure)

Figure notes

5.22-5.24: no breakdown available for the United States and Australia between local and state levels.

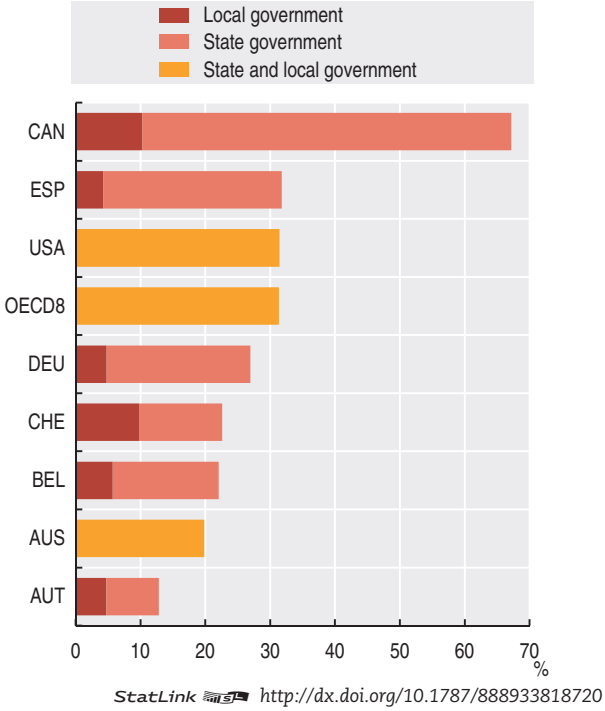
OECD8 and OECD25 refer to the average for OECD federal countries and for OECD unitary countries, respectively.

5.22. Subnational government debt as a % of GDP and of public debt, 2016



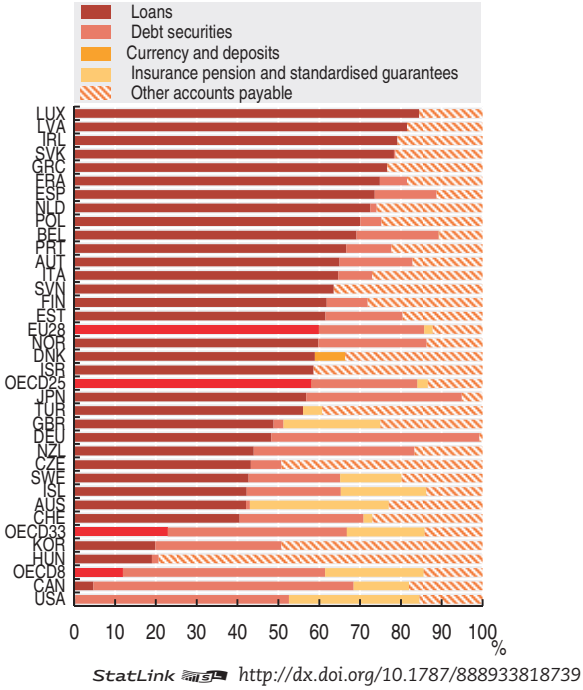
StatLink http://dx.doi.org/10.1787/888933818701

5.23. Local and state government debt in federal countries (% of GDP, 2016)



StatLink http://dx.doi.org/10.1787/888933818720

5.24. Composition of subnational debt by type of liabilities (%, 2016)



StatLink http://dx.doi.org/10.1787/888933818739

ANNEX A

Defining regions and functional urban areas

Table A.1. **Territorial grid of OECD member countries**

Code	Region	Territorial level 2 (TL2)	Non-official grid (NOG)	Territorial level 3 (TL3)
AUS	Australia	States/territories (8)	-	Statistical Areas Level 4 and Greater Capital City Statistical Area (49)
AUT	Austria	Bundesländer (9)	-	Gruppen von Politischen Bezirken (35)
BEL	Belgium	Régions (3)	-	Arrondissements (44)
CAN	Canada	Provinces and territories (13)	LFS, Economic areas (71)	Census divisions (294)
CHL	Chile	Regions (15)		Provincias (54)
CZE	Czech Republic	Oblasti (8)	-	Kraje (14)
DNK	Denmark	Regioner (5)	-	Landsdeler (11)
EST	Estonia	Region (1)	-	Groups of maakond (5)
FIN	Finland	Suuralueet (5)	-	Maakunnat (19)
FRA	France	Régions de France métropolitaine (13) + Régions d'outre-mer (5)	Régions (avant la réforme territoriale de 2016) (22)	Dpartements de France métropolitaine (96) + Départements d'outre-mer (5)
DEU	Germany	Bundesländer (16)	Raumordnungsregionen / Spatial planning regions (96)	Kreise (402)
GRC	Greece	Regions (13)	-	Regional units and combination of regional units (52)
HUN	Hungary	Planning statistical regions (7)	-	Counties and Budapest (20)
ISL	Iceland	Regions (2)	-	Landsvaedi (8)
IRL	Ireland	Groups Regional Authority Regions (2)	-	Regional Authority Regions (8)
ISR	Israel	Districts (6)	-	Districts (6)
ITA	Italy	Regioni (21)	-	Province (110)
JPN	Japan	Groups of prefectures (10)	-	Prefectures (47)
KOR	Korea	Regions (7)	-	Special city, metropolitan area and province (17)
LVA	Latvia	Region (1)	-	Statistical regions (6)
LUX	Luxembourg	State (1)	-	State (1)
MEX	Mexico	Estados (32)	-	Grupos de municipios (209)
NDL	Netherlands	Provinces (12)	-	COROP regions (40)
NZL	New Zealand	Regional councils (14)	-	Regional councils (14)
NOR	Norway	Landsdeler (7)	-	Fylker (19)
POL	Poland	Vojewodztwa (16)	-	Podregiony (66)
PRT	Portugal	Comissões de Coordenação e Desenvolvimento Regional e Regiões Autónomas (7)	-	Grupos de municipios (25)
SVK	Slovak Republic	Zoskupenia krajov (4)	-	Kraj (8)
SVN	Slovenia	Kohezijske regije (2)	-	Statistične regije (12)
ESP	Spain	Comunidades autonomas (19)	-	Provincias (59)
SWE	Sweden	Riksomraden (8)	-	Län (21)
CHE	Switzerland	Grandes régions (7)	-	Cantons (26)
TUR	Turkey	Regions (26)	-	Provinces (81)
GBR	United Kingdom	Regions and countries (12)	-	Upper tier authorities or groups of lower tier authorities or groups of unitary authorities or LECs or groups of districts (173)
USA	United States	States and the District of Columbia (51)	-	Economic areas (179)

Table A.2. **Territorial grid of selected emerging economies**

Code	Country	Territorial level 2 (TL2)
BRA	Brazil	Estados + districto federal (27)
CHN	China	31 provinces; special administrative region of Hong Kong, China special administrative region of Macao, China and Chinese Taipei (33)
COL	Colombia	Departamentos + Capital District (33)
IND	India	States and union territories (35)
LTU	Lithuania	Region (1)
PER	Peru	Departamentos + Provincia Constitucional del Callao (25)
RUS	Russian Federation	Oblast or okrug (83)
ZAF	South Africa	Provinces (9)

Table A.3. **Smallest and largest regional population and surface by country**

Country	Number of TL3 regions	Region with the highest		Region with the lowest		Number of TL2 regions	Region with the highest		Region with the lowest	
		Population	Density	Population	Density		Population	Density	Population	Density
Australia	49	5 029 768	473	38 023	0.1	8	7 861 068	174.6	246 105	0.2
Austria	35	1 867 582	4 728.1	20 426	20.2	9	1 867 582	4 728.1	291 942	59.6
Belgium	44	1 199 095	7 447.8	48 745	46.6	3	6 526 061	7 447.8	1 199 095	215.8
Canada	294	2 929 886	4 649.1	475	0	13	14 193 384	17.9	37 996	0.02
Chile	54	5 613 982	2 765.1	2 645	0.1	15	7 482 635	485.8	110 288	1
Czech Republic	14	1 338 982	2 640.2	296 749	66.4	8	1 687 764	2 640.2	1 118 126	71.4
Denmark	11	875 084	4 272.7	39 773	59.9	5	1 807 404	706.3	587 335	74.5
Estonia	5	583 728	134.7	123 319	13.4	1	1 315 819	30.3	1 315 819	30.3
Finland	19	1 638 293	180.1	29 214	1.9	5	1 638 293	180.1	29 214	6.4
France	101	2 612 189	20 779.7	75 810	3.3	27	12 193 865	1 015.1	249 154	3.3
Germany	402	3 574 830	4 708.4	34 428	36.4	16	17 890 100	4 007.7	678 753	69.4
Greece	52	1 108 085	10 631.2	19 285	10.6	13	3 773 559	991.5	203 700	29.3
Hungary	20	1 752 704	3 338.5	192 573	50.8	7	3 000 076	433.8	894 223	63.1
Iceland	8	216 878	208	6 870	0.5	2	216 878	220.2	121 471	1.2
Ireland	8	1 348 462	1 470.5	296 610	33.1	2	3 509 395	96.7	1 274 988	39.7
Israel	6	2 115 800	8 072.1	399 300	87.7	6	2 115 800	8 072.1	399 300	87.7
Italy	110	4 353 738	2 673.8	57 185	31	21	10 019 166	439.4	126 883	39.2
Japan	47	13 624 000	7 114.4	570 000	64.1	10	36 294 000	2 768.0	3 818 000	64.1
Korea	17	12 630 972	16 203.4	263 666	91.5	7	25 383 418	2 168.6	599 333	91.5
Latvia	6	641 423	2 596.9	191 794	13	1	1 950 116	31.4	1 950 116	31.4
Lithuania	10	805 173	85.4	98 608	20.1	1	2 847 904	45.5	2 847 904	45.5
Luxembourg	1	590 667	228.4	590 667	228.4	1	590 667	228.4	590 667	228.4
Mexico	209	8 287 260	7 459.3	9 360	0.8	32	17 363 387	5 937.5	747 801	11
Netherlands	40	1 445 056	3 094.2	46 850	128	12	3 650 222	1 301.3	381 568	186.6
New Zealand	14	1 614 400	360.7	32 500	1.4	14	1 614 400	360.7	32 500	1.4
Norway	19	666 759	1 565.2	76 149	1.7	7	1 271 127	254	385 669	4.5
Poland	72	1 750 345	3 500.7	186 455	42.5	16	5 341 484	371.4	950 710	58.1
Portugal	25	2 821 349	935.8	82 731	13.9	7	3 584 575	935.8	245 283	22.7
Slovak Republic	8	822 310	312.7	561 156	68.9	4	1 830 751	312.7	641 892	82.5
Slovenia	12	539 672	231.8	52 582	36.7	2	1 091 159	124.8	974 736	88.5
Spain	59	6 476 838	6 534.3	10 872	8.8	19	8 408 976	6 534.3	84 946	25.8
Sweden	21	2 269 060	347.7	58 003	2.6	8	2 269 060	347.7	374 245	3.4
Switzerland	26	1 487 969	5 218.1	16 003	27.8	7	1 859 557	895.8	354 375	102.8
Turkey	81	14 804 116	2 849.1	82 193	11.1	26	14 804 116	2 849.1	766 303	26.5
United Kingdom	173	1 183 120	15 409.3	21 755	7	12	9 056 701	5 641.3	1 875 228	69.3
United States	179	23 764 056	616.4	83 028	0.5	51	39 250 017	4 284.1	585 501	0.5
OECD average	63	3 732 879	4 273.2	130 995	34.2	11	7 654 458	1 863.3	752 532	53.8

Table A.4. **Percentage of national population living in predominantly urban, intermediate and predominantly rural regions (TL3) and number of regions classified as such in each country**

	Percentage of population (2017)			Number of regions (TL3)		
	Rural (%)	Intermediate (%)	Urban (%)	Rural	Intermediate	Urban
Australia	19.2	10.0	70.8	29	11	9
Austria	40.5	27.6	31.9	24	7	4
Belgium	8.5	38.2	53.3	12	19	13
Canada	14.1	18.8	67.1	229	35	30
Chile	35.9	15.7	48.4	41	7	6
Czech Republic	21.2	54.0	24.8	4	8	2
Denmark	28.6	48.7	22.7	4	5	2
Estonia	44.7	10.9	44.4	3	1	1
Finland	39.9	30.3	29.8	12	6	1
France	31.0	33.8	35.2	55	31	15
Germany	15.7	40.9	43.4	110	197	95
Greece	31.9	22.8	45.3	29	15	8
Hungary	18.9	63.2	17.9	6	13	1
Iceland	35.8	64.2	0.0	7	1	..
Ireland	59.9	11.9	28.2	6	1	1
Israel	0.0	32.1	67.9	..	2	4
Italy	9.5	42.5	47.9	20	60	30
Japan	11.8	31.1	57.0	13	22	12
Korea	16.9	13.1	70.0	5	3	9
Latvia	21.9	26.5	51.6	2	2	2
Lithuania	8.6	63.2	28.3	2	7	1
Luxembourg	0.0	100.0	0.0	..	1	..
Mexico	37.2	17.4	45.4	145	30	34
Netherlands	0.6	25.3	74.0	1	17	22
New Zealand	9.0	45.8	45.2	3	9	2
Norway	28.5	41.3	30.2	9	7	3
Poland	35.0	38.6	26.5	31	26	15
Portugal	31.3	22.2	46.5	16	6	3
Slovak Republic	37.4	50.8	11.8	3	4	1
Slovenia	58.5	41.5	0.0	9	3	..
Spain	3.4	33.6	63.0	10	32	17
Sweden	9.1	40.7	50.2	5	11	5
Switzerland	3.2	36.1	60.7	2	14	10
Turkey	29.9	36.5	33.6	49	27	5
United Kingdom	3.6	21.7	74.7	15	34	124
United States	37.8	20.2	42.0	132	21	26
Tunisia	31.6	27.0	41.4	11	6	7
Bulgaria	13.0	68.3	18.6	7	20	1
Romania	53.7	33.2	13.2	28	11	3

Figure A.1. **Extended regional typology**

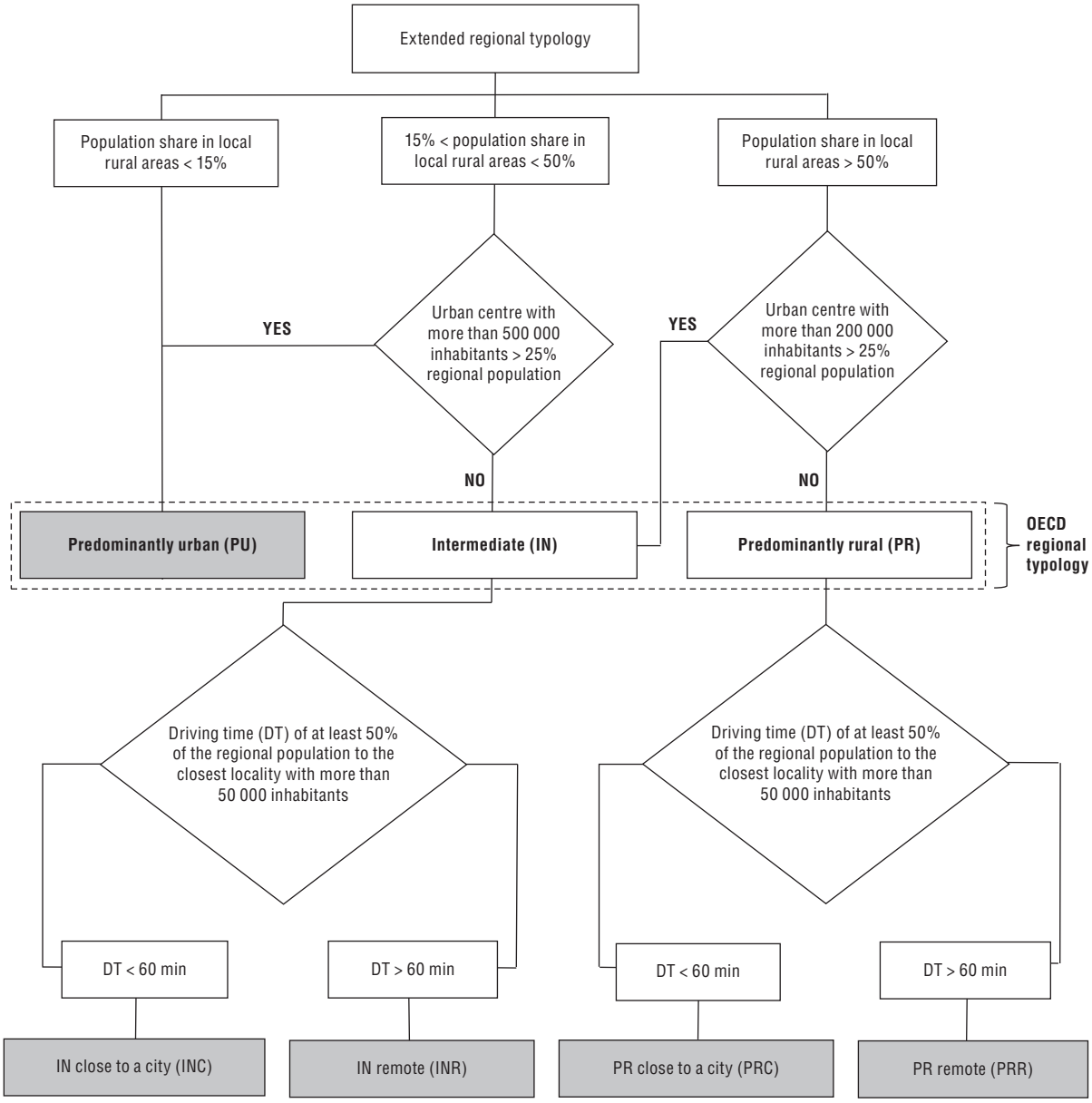


Figure A.2. **Methodology to define the functional urban areas**

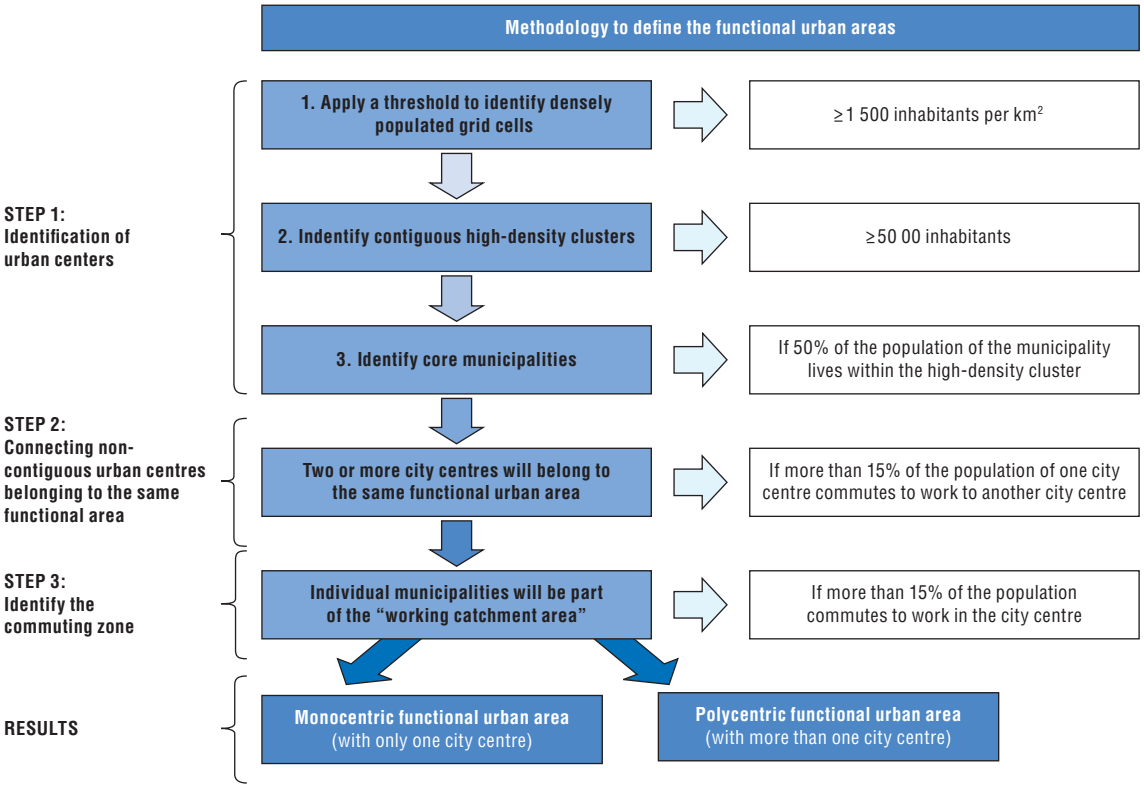


Table A.5. **Number of metropolitan areas and share of national population in metropolitan areas, 2015**

Metropolitan areas (functional urban areas with population above 500 000)

	Country	Total metropolitan areas		Population between 500 000 and 1.5 million		Population above 1.5 million		Rest (non-metropolitan)
		Number	% of national population	Number	% of national population	Number	% of national population	% of national population
AUS	Australia	6	63.7	2	7.9	4	55.7	36.3
AUT	Austria	3	47.1	2	14.6	1	32.5	52.9
BEL	Belgium	4	44.8	3	21.5	1	23.3	55.2
CAN	Canada	11	60.6	6	13.6	5	47	39.4
CHL	Chile	3	51.5	2	10.9	1	40.6	48.5
CZE	Czech Republic	3	34.9	2	13.6	1	21.3	65.1
DNK	Denmark	1	35.7	0	0	1	35.7	64.3
EST	Estonia	1	44.8	1	44.8	0	0	55.2
FIN	Finland	1	25.5	1	25.5	0	0	74.5
FRA	France	15	39.1	12	15.3	3	23.9	60.9
DEU	Germany	26	49.7	18	19	8	30.7	50.3
GRC	Greece	2	44.2	1	10.1	1	34.1	55.8
HUN	Hungary	1	30.1	0	0	1	30.1	69.9
IRL	Ireland	1	39.4	0	0	1	39.4	60.6
ITA	Italy	13	33.8	9	10	4	23.8	66.2
JPN	Japan	34	72.3	29	19	5	53.3	27.7
KOR	Korea	12	79.9	7	10.5	5	69.4	20.1
LVA	Latvia	1	46.1	1	46.1	0	0	53.9
LUX	Luxembourg	1	100.0	1	100.1	0	0	-0.1
MEX	Mexico	38	53.1	29	19.4	9	33.7	46.9
NLD	Netherlands	6	45.6	4	18.9	2	26.7	54.4
NOR	Norway	1	26.8	1	26.8	0	0	73.2
POL	Poland	10	32.6	8	18	2	14.6	67.4
PRT	Portugal	2	39.9	1	12.3	1	27.6	60.1
SVK	Slovakia	1	11.2	1	11.2	0	0	88.8
SVN	Slovenia	1	26.3	1	26.3	0	0	73.7
ESP	Spain	11	42.2	7	10.8	4	31.4	57.8
SWE	Sweden	3	39.5	2	16.8	1	22.8	60.5
CHE	Switzerland	3	28.7	3	28.7	0	0	71.3
GBR	United Kingdom	21	55.2	16	19.9	5	35.4	44.8
USA	United States	93	63.7	59	15.6	34	48.2	36.3
	OECD31	**329**	**54.9**	**229**	**16**	**100**	**38.9**	**45.1**
COL	Colombia	9	45.2	5	9.1	4	36.1	54.8

ANNEX B

Sources and data description

User guide: List of variables

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Note on Israel: The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Area

Country	Source
EU24 countries[1]	Eurostat: General and regional statistics, demographic statistics, population and area
Australia	Australian Bureau of Statistics (ABS), summing up SLAs
Canada	Statistics Canada http://www12.statcan.ca/english/census01/products/standard/popdwell/Table-CD-P.cfm?PR=10&T=2&SR=1&S=1&O=A
Iceland	Statistics Iceland
Israel	Central Bureau of Statistics - Statistical Abstract of Israel.
Japan	Statistical Office, Area by Configuration, Gradient and Prefecture www.stat.go.jp/English/data/nenkan/1431-01.htm
Korea	Korea National Statistical Office
Mexico	Mexican Statistical Office (INEGI)
New Zealand	Statistics New Zealand, data come from the report "Water Physical Stock Account 1995–2005"
Norway	Statistics Norway, StatBank table: Table: 09280: Area of land and fresh water (km²) (M)
Switzerland	Office fédéral de la statistique, ESPOP, RFP
Turkey	Eurostat: General and regional statistics, demographic statistics, population and area
United States	Census Bureau
Brazil	Instituto Brasileiro de Geografia e Estadística (IBGE)
China	National Bureau of Statistics of China
India	Statistics India (Indiastat)
Russian Federation	Federal State Statistics Service of Russian Federation
South Africa	Statistics South Africa

1. EU24 countries : Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom.

Business Demography, births and deaths of enterprises

Country	Source	Years Birth (Death)	Territorial level
Australia	Australian Bureau of Statistics (ABS). Counts of Australian Businesses, including Entries and Exits (Cat. 8165.0)	2015 (2015)	2
Austria	Eurostat Regional Business Demography	2015 (2014)	3
Belgium	Statistics Belgium	2015 (2015)	2
Canada	Statistics Canada ; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2015 (2015)	2
Czech Republic	Eurostat Regional Business Demography	2015 (2014)	3
Denmark	Eurostat Regional Business Demography	2013 (2013)	3
Estonia	Eurostat Regional Business Demography	2015 (2015)	3
Finland	Eurostat Regional Business Demography.	2015 (2015)	3
France	Eurostat Regional Business Demography	2015 (2014)	3
Hungary	Eurostat Regional Business Demography	2015 (2014)	3
Israel	CBS	2014 (2011)	3
Italy	Eurostat Regional Business Demography	2015 (2014)	3
Japan[1]	Statistics Japan	2014 (2014)	3
Korea	Korean Statistical Information Service. Number of enterprises by region (Active/Births/Deaths)	2015 (2015)	3
Latvia	Central Statistical Bureau	2014 (2013)	3
Luxembourg	Eurostat Regional Business Demography	2014 (2013)	3
Mexico[1]	INEGI	2014 (2014)	2
Netherlands	Eurostat Regional Business Demography	2010 (2009)	3
New Zealand[1]	Statistics New Zealand	2016 (2016)	3
Norway[2]	Statistics Norway, Business and enterprise register	2015 (..)	3
Poland	Eurostat Regional Business Demography	2010 (2009)	3
Portugal	Eurostat Regional Business Demography	2015 (2014)	3
Slovak Republic	Eurostat Regional Business Demography.	2015 (2014)	3
Slovenia	Eurostat Regional Business Demography.	2010 (2010)	3
Spain	Eurostat Regional Business Demography	2014 (2013)	3
United Kingdom	Office for National Statistics-Business Demography	2015 (2015)	3
United States[1]	U.S. Census Bureau. Statistics of US businesses (SUSB)	2014 (2014)	2

1. For Japan, Mexico, New Zealand, and United States, data refer to establishments / local units.
2. Norway: Firm deaths are not recorded.

Employment at place of work and gross value added by industry (ISIC rev. 4)

Country	Source	Years	Territorial level
EU23 countries[1]	Eurostat, Regional economic accounts, Branch accounts, Employment	2000-16	2
Australia[2]	Australian Bureau of Statistics, cat. no. 5220.0 - Australian National Accounts: State Accounts, and Table 6291.0.55.003 Labour Force	2000-15	2
Canada	Statistics Canada. CANSIM database, Tables 379-0028 Gross domestic product (GDP) at basic prices and 282-0008 Labour force survey estimates (LFS), by North American Industry Classification System	2002-16	2
Chile	Banco Central de Chile	2013	2
Iceland	n.a.	-	-
Israel	n.a.	-	-
Japan	Statistics Bureau, Economically Active Population Survey & Local Area Labour Force Survey	2009-12	2
Korea	Korean National Statistical Office - KOSIS Census on basic characteristics of establishments	2004-16	2
Mexico	INEGI. Consulta interactiva de datos www.inegi.org.mx/sistemas/olap/proyectos/bd/consulta.asp?p=16859&c=17383&s=est&cl=3#	2016	2
New Zealand	Statistics New Zealand. Gross domestic product by industry, per region	2000-14	2
Norway	Eurostat, Regional economic accounts, Branch accounts, Employment	2016	2
Switzerland	Federal Statistical Office FSO. Gross value added (GVA) by canton and industries (je-e-04.06.02) and Swiss Labour Force Survey - SLFS	2002-13	2
Turkey	Turkish Statistical Institute (TurkStat). Employment data from the Household Labour Force Survey. No regional breakdown for GVA by industry.	2009-14	2
United States	Bureau of Economic Analysis. Gross Value Added by State and employment by industry (SA25, SA25N)	2000-16	2

1. EU23 countries : Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom.
2. Australia: Data are derived from ANZSIC and do not match the ISIC classification.

Foreign-born (migrants)

Country	Source	Years	Territorial level
EU22 countries[1]	European Union Labour Force Survey (EU-LFS, data provided by Eurostat)	2005-15	2, 3
Australia	Survey of Education and Work (SEW)	2005-15	2
Canada	Canadian Labour Force Survey	2005-15	2
Mexico	National Survey of Occupation and Labour	2005-15	2
United States	American Community Survey	2005-15	2

1. EU22 countries include Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and United Kingdom.

Gross domestic product

	Source	Years	Territorial level
EU25 countries[1, 2]	Eurostat, Regional economic accounts	2000-16	2
		2000-15	3, metropolitan areas
Australia[2]	Australian Bureau of Statistics, 5220.0. Gross state product, figures based on fiscal year (July-June).	2000-16	2, metropolitan areas
Canada[2]	Statistics Canada, Provincial economic accounts	2000-16	2
		2001-13	metropolitan areas
Chile[2]	Banco central de Chile. Cunetas nacionales de Chile	2000-16	2, metropolitan areas
Iceland[3]	n.a.	-	-
Israel[3]	n.a.	-	-
Japan[2]	Economic and Social Research Institute, Cabinet Office, data are based on fiscal year (April-March).	2001-14	2, 3, metropolitan areas
Korea[2]	Korean National Statistical Office	2000-16	2, 3, metropolitan areas
Mexico[2]	INEGI, System of national accounts of Mexico	2003-16	2, metropolitan areas
New Zealand	Statistics New Zealand	2000-15	2,3
Norway[4]	Norwegian Regional Accounts	2000-16	2, 3, metropolitan areas
Switzerland[2]	Swiss Federal Statistical Office, Statweb	2008-15	2, 3, metropolitan areas
Turkey	Turkish Statistical Institute (TurkStat)	2004-14	2,3
United States[2]	Bureau of Economic Analysis	2000-16	2, metropolitan areas

1. EU25 countries: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom.
2. GDP estimates at the metropolitan area level were based on TL3 data with the exception of Chile and Mexico where TL2 data were used. Metropolitan estimates for the United States were based on metropolitan areas from the U.S. Bureau of Economic Analysis, and for Canada, based on Census Metropolitan Areas from Statistics Canada. The methodology used to estimate GDP figures at metropolitan level is described in Annex C.
3. Iceland and Israel: Data not available at the regional level.
4. Norway: 2000-07 data estimated by the Secretariat to obtain long time series linked with 2008-16 series.

Homicides

Country	Source	Years	Territorial Level
Australia	Australian Bureau of Statistics (ABS), Recorded Crime - Victims, Australia, 2013 (cat. no. 4510.0)	2015	2
Austria	Austria Home Office, Crime Statistics.	2016	2
Belgium	Belgian Federal Police	2016	2
Canada	Statistics Canada. CANSIM database Table 253-0001 - Homicide Survey, Canadian Centre for Justice Statistics.	2016	2
Chile[1]	INE, Chile. Undersecretariat of Crime Prevention, Ministry of Interior and Public Safety.	2016	2
Czech Republic	Czech Statistical Office; Police of the Czech Republic.	2016	2
Denmark	Statistics Denmark, StatBank Table STRAF11: Reported criminal offences, Homicide series	2016	2
Estonia[2]	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2016	3
Finland	Statistics Finland, Justice statistics	2016	2
France[3]	INSEE, Etat 4001 annuel, DCPJ.	2012	2
Germany	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2016	2
Greece	Hellenic Statistical Authority, Hellenic Police (offences committed) / completed and attempted action	2016	2
Hungary	Ministry of Justice, Chief Prosecutor's Department	2016	2
Iceland	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2015	2
Ireland	CSO, StatBank Ireland, Table CJQ02: Recorded Crime Offences by Garda Region	2016	2
Israel[4]	Central Bureau of Statistics Israel	2015	2
Italy	ISTAT, crimes reported by the police forces to the judicial authority	2013	2
Japan	Criminal Statistics in 2014, National Police Agency, Publications of the Police Policy Research Center	2015	2
Korea	Korean Ministry of Justice	2016	2
Latvia	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2014	3
Mexico[5]	Directorate General of Government of Mexico, Public Safety and Justice Statistics	2016	2
Netherlands	Statistics Netherlands (CBS)-STATLINE	2012	2
New Zealand	Statistics New Zealand, Annual Recorded Offences for the latest Calendar Years (ANZSOC)	2014	2
Norway[3]	Directorate of the Police of Norway (homicides) and Statistics Norway (crime against property)	2016	2
Poland[6]	National Police Headquarters.	2011	2
Portugal	Ministry of Justice - Directorate-General for Justice Policy	2016	2
Slovak Republic	Statistical Office of the Slovak Republic, regional database Datacube	2016	2
Slovenia	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2012	2
Spain	INE	2016	2
Sweden	Swedish National Council for Crime Prevention (Brå).	2014	2
Switzerland	Federal Statistical Office (FSO), Police crime statistics	2016	2
Turkey	General Directorate of Security, General Commandership of Gendarme	2013	2
United Kingdom	ONS, Crime and Justice, Table 04, Police Force Area Data Tables - Crime in England and Wales, Year Ending December 2013	2016	2
United States	Federal Bureau of Investigation, Crime in the United States, Table 4	2016	2
Colombia	Policía Nacional, Colombia	2016	2
Lithuania	Information Technology and Communications Department under the Ministry of the Interior of the Republic of Lithuania, Register of Criminal Offences	2015	3
Russian Federation	Federal State Statistics Service (Rosstat), data according to the law-enforcement authorities	2014	3

1. Chile: Figures are people who have been the victim of murder. Data based on crimes known by one police force (Carabineros de Chile).
2. Estonia and Italy: In some cases the exact place where a crime is committed is unknown. Therefore the sums of regions are not always equal with larger geographic aggregation or country total data (the latter including more crimes).
3. France and Norway: Homicides data exclude acts of terrorism and mass killing.
4. Israel: Police districts are different from CBS districts, Northern district data includes Haifa District. Some files are not included in the district data when they are managed at the national level. Homicide data include acts of terrorism.
5. Mexico: As part of the implementation of the National Census of Law Enforcement, data correspond to administrative records of deaths from homicide location occurrence, registered preliminary enquiries initiated by the Public Prosecutor of the Common Jurisdiction in each of the federal states.
6. Poland: Data include ascertained crimes from the category of homicide and infanticide in any form.

Household disposable income

Country	Source	Years	Territorial level
EU21 countries[1]	Eurostat, Household income statistics, disposable income	2016	2
Australia	- Australian Bureau of Statistics, Australian National Accounts, Household Income Account (cat. no. 5220.0 table 12). Gross disposable income series - Australian Bureau of Statistics, Estimates of Personal Income for Small Areas: http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6524.0.55.0022011-2015?OpenDocument	2016 2016	2 Metropolitan areas
Austria	Statistics Austria, Integrated Wage and Income Tax Statistics (sent by Statistics Austria)	2013-15	Metropolitan areas
Belgium	Statistics Belgium, Total net taxable income by tax return and by municipality: https://statbel.fgov.be/fr/themes/menages/revenus-fiscaux/plus	2013-15	Metropolitan areas
Canada	- Statistics Canada. CANSIM database. Table 384-0040 - Current accounts Households, provincial and territorial - Statistics Canada, sent by Statistics Canada	2015 2015	2 Metropolitan areas
Chile[3]	- National Socio-economic Survey (CASEN) - Ministerio de Desarrollo Social, Gobierno de Chile, Encuesta CASEN : http://observatorio.ministeriodesarrollosocial.gob.cl/casen-multidimensional/casen/basedatos.php	2014 2015	2 Metropolitan areas
Denmark	Statistics Denmark, Disposable family income by municipality; Avg. equivalised disposable income in decile groups, by decile average, municipality and time: http://www.statistikbanken.dk/statbank5a/SelectTable/Omrade0.asp?SubjectCode=04&ShowNews=OFF&PLanguage=1	2014-16	Metropolitan areas
Estonia	Statistics Estonia , Number of recipients and Average monthly gross income per employee by regions and administrative units: http://pub.stat.ee/px-web.2001/Dialog/varval.asp?ma=IM005&lang=1	2015-17	Metropolitan areas
Finland	Statistics Finland , Numbers and income of dwelling population and household-dwelling units by Municipality, Year and Data : http://pxnet2.stat.fi/PXWeb/pxweb/en/StatFin/StatFin__tul__tjkt/statfin_tjkt_pxt_001.px/?rxid=97f42fff-900d-4ede-bb39-1dab702e3f82	2015-16	Metropolitan areas
France	INSEE, Dispositif Fichier Localisé social et fiscal, Distribution des niveaux de vie et composition du revenu disponible: https://www.insee.fr/fr/statistiques/3126432	2012-14	Metropolitan areas
Germany	Statistische Ämte des Bundes und der Länder, Lohn und Einkommenssteuer : https://www.govdata.de/sr_RS_latin/web/guest/daten/-/details/stlae-service-73111-01-01-5	2013	Metropolitan areas
Hungary	Hungarian Ministry of Finance. Net personal income per municipality (data provided by Hungarian Ministry of Finance)	2014-16	Metropolitan areas
Iceland[2]	n.a.	-	-
Israel	Central Bureau of Statistics- Income Survey	2015	2
Italy	Ministry of Economy and Finance, Dichiarazioni fiscali: http://www1.finanze.gov.it/finanze3/pagina_dichiarazioni/dichiarazioni.php	2014-16	Metropolitan areas
Japan	Statistics Bureau of Japan, Ministry of Internal Affairs and Communications	2013	2
Korea	Statistics Korea, KOSIS database - Korean Regional Accounts	2015	2
Mexico[2]	- INEGI, Household Income and Expenditure National Survey Socioeconomic Conditions Module (MCS) - CONEVAL (Consejo Nacional de Evaluacion de la Politica de Desarrollo Social), Ingreso corriente total per cápita (ICTPC) mensual promedio, por municipio (sent by CONEVAL)	2016 2015	2 Metropolitan areas
Netherlands	Statistics Netherlands, Huishoudensinkomen naar postcode: https://www.cbs.nl/nl-nl/maatwerk/2018/15/huishoudensinkomen-naar-postcode4-2014-2015	2014-15	Metropolitan areas
New Zealand	Statistics New Zealand. Household income by region	2016	2
Norway	- Statistics Norway, Regional Accounts. Table: 09797: Households' income - Statistics Norway, Tax statistics for individual tax payers: https://www.ssb.no/en/statbank/table/05854?rxid=33b51e87-8ceb-4b4e-943b-98942afa6081 Income intervals, by gender. Number of residents 17 years and older: https://www.ssb.no/en/statbank/table/08411/?rxid=4f133c74-017f-4b49-bb77-a2867e8b2f12	2016 2014-16	2 Metropolitan areas
Sweden	Statistics Sweden, Income and Tax Statistics: http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__HE__HE0110__HE0110A/SamForvInk1/?rxid=660355cb-8963-4b2b-a355-c531348d6192	2014-16	Metropolitan areas
Switzerland[2]	n.a.	-	-
Turkey	n.a.	-	-
United Kingdom	Office for National Statistics, Small area income estimates for middle layer super output areas, England & Wales: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/smallareaincomeestimatesformiddlelayersuperoutputareasenglandandwales	2014;16	Metropolitan areas

Household disposable income *(cont.)*

Country	Source	Years	Territorial level
United States	- U.S. Bureau of Economic Analysis, Table SA51 Disposable Personal Income American Community Survey - United States Census Bureau, Aggregate household income in the past 12 months, 5-year estimates: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B19025&prodType=table	2016 2015-16	2 Metropolitan areas

The disposable income of private households is derived from the balance of primary income by adding all current transfers from the government, except social transfers in kind and subtracting current transfers from the households such as income taxes, regular taxes on wealth, regular inter-household cash transfers and social contributions. The disposable income of households does not take into account in kind social transfers to households. A preferable measure of the material condition of households at regional level could be 'adjusted disposable income' which also reallocates income from government and non-profit institutions benefitting households, through expenditure on individual goods and services such as health, education and social housing (in-kind expenditure). Interregional disparities in terms of adjusted household income could shed light on possible areas of social exclusion, material deprivation and lack of access to essential services.

1. EU21 countries. Latest year available: 2016 for Austria, Bulgaria, Czech Republic, Denmark, Italy and Slovenia; 2015 for Finland, France, Germany, Greece, Hungary, Ireland, Netherlands, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden and United Kingdom; 2014 for Belgium.
2. Iceland and Switzerland: data are not available at the regional level.

Households with an Internet broadband connection

Country	Source	Year	Territorial Level
EU20 countries[1]	Eurostat, Regional information society statistics, table isoc_r_broad_h	2017	2
Australia	Australian Bureau of Statistics (ABS), Household Use of Information Technology, Australia, 2012-13 (cat. no. 8146.0), Financial year	2015	2
Canada	Statistics Canada, CANSIM (database), Table 203 00272 Survey of household spending (SHS)	2015	2
Chile	INE, Chile, National Statistical Institute	2013	2
Iceland	Statistics Iceland. Internet connections and access devices in households 2003-12, broadband connection	2012	2
Israel	Central Bureau of Statistics Israel, Household expenditure survey, Table 16	2015	2
Japan	Statistics Bureau, Ministry of Internal Affairs and Communications, Japan	2015	2
Korea	Korean Ministry of Science, ICT and Future Planning - Survey on the Internet Usage (MSIP, KISA)	2016	2
Mexico	INEGI-Módulo, Availability and Use of Information Technologies in Households (MODUTIH)	2016	2
New Zealand	Statistics New Zealand: The household Use of Information and Communication Technology (ICT) Survey	2012	2
Switzerland	Federal Statistical Office of Switzerland (FSO). 2006-11 : *Enquête sur le budget des ménages (EBM) Société de l'information - Internet haut débit - Indicateur* 30107 ; 2014 Omnibus TIC	2017	2
Turkey	Eurostat, Regional information society statistics, table isoc_r_broad_h	2013	2
United States	Census Bureau, American Community Survey (ACS), 1-year estimates, table S1501	2015	2
Russian Federation	Federal State Statistics Service (Rosstat), sample survey on budget of households	2015	2
Tunisia	INS	2014	2
South Africa	Statistics South Africa, General Household Survey	2013	2

1. EU20 refers to Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden and United Kingdom.

Housing expenditure as a share of household disposable income

Country	Source	Year	Territorial level
Australia	Australia Bureau Statisitics; Table 4130.0	2015	2
Austria	Statistics Austria, EU-SILC	2015	2
Belgium	Household Budget Survey	2014	2
Canada	Statistics Canada; CANSIM, Table 203-0022	2016	2
Chile	n.a.	-	-
Czech Republic	n.a.	-	-
Denmark	Statistics Denmark; Household Budget Survey, Tables FU51 and FU6	2016	2
Finland	Statistics Finland; Table ktutk_003_201600	2016	2
France	n.a.	-	-
Germany	n.a.	-	-
Greece	n.a.	-	-
Hungary	Hungarian Central Statistical Office. Representative household survey	2015	2
Iceland	n.a.	-	-
Ireland	Household Budget Survey, Tables HS067 and HS068	2015	2
Israel	Central Bureau of Statistics Israel, Household Expenditure survey	2015	2
Italy	OECD estimates based on ISTAT - Household Budget Survey	2015	2
Japan	OECD estimates based on Monthly spending on housing data, Table 11	2013	2
Korea	n.a.	-	-
Mexico	n.a.	-	-
Netherlands	n.a.	-	-
New Zealand	Statistics New Zealand	2013	North/South Islands
Norway	OECD estimates based on Statistics Norway - Survey on Consumer Expenditure	2012	2
Poland	Household Budget Survey	2013	2
Portugal	Statistics Portugal, Household Budget Survey	2011	2
Slovak Republic	Statistical Office of the SR, Household Budget Survey	2016	2
Slovenia	n.a.	-	-
Spain	OECD estimates based on INE - Household Budget Survey; Table-10722	2015	2
Sweden	n.a.	-	-
Switzerland	Household Budget Survey (3-year-pooled sample)	2013	2
Turkey	Household Budget Survey	2013	2
United Kingdom	Office for National Statistics; Table A35	2016	2
United States	n.a.	-	-

Income segregation in cities

Country	Census authority	Years	Areal unit definition
Australia	Australian Bureau of Statistics, Census DataPacks - http://www.abs.gov.au/websitedbs/censushome.nsf/home/datapacks	2010-15	Statistical Area level 1
Brazil	Instituto Brasileiro de Geografía e Estatística. - Data file: ftp://ftp.ibge.gov.br/Censos/Censo_Demografico_2010/Resultados_do_Universo/Agregados_por_Setores_Censitarios/ - Boundaries file: http://downloads.ibge.gov.br/downloads_geociencias.htm	2010	Setores Censitarios
Canada	Statistics Canada - National Household Survey. - Data file: http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/prof/details/download-telecharger/comprehensive/comp-csv-tab-nhs-enm.cfm?Lang=E - Boundaries file: http://www12.statcan.gc.ca/census-recensement/2011/geo/bound-limit/bound-limit-2011-eng.cfm - Data file: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/download-telecharger/comp/page_dl-tc.cfm?Lang=E	2011 2016	Census tract and district
Denmark	Dansk Demografisk Database.	2013	Sogne
France	Institut National de la Statistique et des études économique. - Data file: https://www.insee.fr/fr/statistiques?taille=100&debut=0&idprec=2386703&categorie=3&geo=ICQ-1 - Boundaries file: http://professionnels.ign.fr/contoursiris and http://professionnels.ign.fr/geofla	2006-14	IRIS and municipality
Ireland	Central Statistics Office. - Data file: http://www.cso.ie/en/census/census2006smallareapopulationstatisticssaps/ - Boundaries file: https://data.gov.ie/dataset/small-areas-generalised-50m-osi-national-statistical-boundaries	2006-16	Census enumeration area
Mexico	Instituto Nacional de Estadística y Geografía (INEGI)	2000	AGEB
Netherlands	Statistics Netherlands. - Data file: http://www.cbs.nl/en-GB/menu/home/default.htm?Languageswitch='on' - Boundaries file: https://www.cbs.nl/nl-nl/dossier/nederland-regionaal/geografische-data	2008	Neighbourhood
New Zealand	Statistics New Zealand. - Data file: http://www.stats.govt.nz/Census/2013-census/data-tables/meshblock-dataset.aspx - Boundaries file: http://www.stats.govt.nz/browse_for_stats/Maps_and_geography/Geographic-areas/digital-boundary-files.aspx	2001-13	Mesh block / area unit
South Africa	Statistics South Africa	2011	Small Area
United Kingdom	Office for National Statistics. Data file	2001-11	Output areas
United States	U.S. Census Bureau. - Boundaries file: https://www.nhgis.org/ - 2011 data file: https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml	2000-10	Census tract
United States	- 2016 data file: U.S. Census Bureau - American Community Survey (5-year estimates)	2016	Census tract

Labour force, employment at place of residence by gender, unemployment

Country	Source	Year	Territorial level
EU21 countries[1]	Eurostat, Regional Labour Market statistics (reg_lmk)	2000-17	2
Australia	Australian Bureau of Statistics; Table 6291.0.55.001	2000-17	2
Canada	Statistics Canada; CANSIM, Table 282-0002	2000-17	2
Chile	INE, New National Employment Survey	2010-16	2
Iceland	Statistics Iceland	2000-15	2
Israel	Central Bureau of Statistics Israel	2000-16	2
Japan	Statistics Bureau of Japan, Labour Force Survey	2001-15	2
Korea	Statistics Korea, Economically Active Population Survey & Local Area Labour Force Survey	2000-16	2
Mexico	INEGI, National Survey of Occupation and Employment	2000-16	2
New Zealand	Statistics New Zealand, Household Labour Force Survey	2000-16	2
Norway	Statistics Norway	2000-17	2
Switzerland	Federal Statistical Office of Switzerland, Structural Labour Force Survey	2000-17	2
Turkey	TURKSTAT, Household Labour Force Survey Revised Results	2008-17	2
United States	U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics program	2000-17	2
Colombia	DANE, Great integrated Household Survey	2001-16	2
Peru	National Institute of Statistics and Informatics, National Household Survey	2001-14	2
Russian Federation	Federal State Statistics Service, Labour force Survey	2000-15	2
South Africa	Statistics South Africa; Quarterly Labour Force Survey, Table P0211	2000-14	2
Tunisia	INS	2014	2

1. EU21 countries: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden and United Kingdom.
2. New Zealand: Gisborne/Hawke's Bay combined (NZ016 included in NZ015) and Tasman / Nelson/ Marlborough / West Coast combined (NZ022 included in NZ021).

Labour force by educational attainment

Country	Source	Year	Territorial Level
EU24 countries[1], plus Norway and Switzerland	Eurostat, Labour Force Survey, Regional education statistics	2000-17	2
Australia[2]	Australian Bureau of Statistics, Table 6227.0 Education and Work, LFS	2010-15	2
Canada[3]	Statistics Canada. CANSIM (database), Table 282-0004 - Labour force survey estimates (LFS), by educational attainment, gender and age group, annual	2000-16	2
Chile[4]	INE Chile, New National Employment Survey	2009-15	2
Iceland[7]	Statistics Iceland Labour force survey. Educational attainment of the population 25-64 years old	2003-12	2
Israel	Central Bureau of Statistics Israel	2000-16	2
Japan[7]	Statistics Bureau, 1990, 2000 and 2010 Population Census	2000-10	2
Korea[2]	KOSIS, Economically Active Population Survey	2000-16	2
Mexico	INEGI, National Population and Housing Censuses	2000-15	2
New Zealand	Statistics New Zealand. Household Labour Force Survey	2000-16	2
Turkey[5]	TURKSTAT, Household Labour Force Survey Revised Results	2006-17	2
United States[6]	Census Bureau, American Community Survey (ACS), 1-year estimates, table S1501	2000-16	2
Colombia	DANE, Great integrated household survey (GEIH for its acronym in Spanish)	2005-16	2
Russian Federation	Federal State Statistics Service (Rosstat), Labour force Survey, population in age 15-72 years old	2000-15	2
South Africa	Statistics South Africa, General Household Survey	2002-15	2
Tunisia	INS	2014	2

1. EU24 refers to Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden and United Kingdom (except Northern Ireland). Data refer to the labour force aged 15 and over. Denmark 2007-17; Finland and Italy 2005-17; Slovenia 2010-17.
2. Australia and Korea: Data refer to total labour force.
3. Canada: Data refer to the labour force aged 15 and over.
4. Chile and Mexico: Data refer to the population aged 15 and over.
5. Turkey: Illiterate people are included in the ISCED 0-2.
6. United States: Data refer to the population aged 18 and over.
7. Total labour force educational attainment includes persons not classified by level of education.

Life expectancy at birth, total and by gender

Country	Source	Year	Territorial level
EU9[1]	Eurostat, Regional Demographic Statistics	2015	2
Australia	Australian Bureau of Statistics; Table 3302.0	2015	2
Austria	Statistics Austria	2016	2
Canada[2]	Statistics Canada; CANSIM, Table 053-0003	2014	2
Chile	INE	2016	2
Czech Republic	Czech Statistical Office	2016	2
Denmark	Statistics Denmark; Table HISBR	2015	2
Estonia	Statistics Estonia; Table PO0452	2015	3
Finland	Statistics Finland	2015	2
Germany	Federal Office of Germany and the Statistical Offices of the Federal States	2015	2
Greece	Hellenic Statistical Authority	2015	2
Hungary	Hungarian Central Statistical Office	2015	2
Iceland[3]	n.a.	-	-
Israel	Central Bureau of Statistics	2016	2
Italy	Istat; Table P.5	2015	2
Japan[4]	Statistics Bureau of Japan, MIC, Population Census	2010	2
Korea	Statistics Korea; Kosis, Life tables by Provinces	2014	2
Mexico[5]	National Institute of Statistics and Geography (INEGI)	2016	2
New Zealand[6]	Statistics New Zealand	2013	2
Poland	Central Statistical Office of Poland	2015	2
Portugal	Statistics Portugal	2016	2
Slovak Republic	Statistical Office of the SR	2015	2
Spain[7]	INE	2016	2
Turkey	Eurostat, Regional Demographic Statistics	2015	2
United States[8]	Measure of America	2010	2
Colombia	DANE	2016	2
Russian Federation	Federal State Statistics Service	2015	2

1. EU9 refers to Belgium, France (mainland with 22 regions), Ireland, Netherlands, Norway, Slovenia, Sweden, Switzerland and United Kingdom (except Northern Ireland).
2. Canada: Rates used in this table for the calculation of life expectancy are calculated with data that exclude: births to mothers not resident in Canada, births to mothers resident in Canada, province or territory of residence unknown, deaths of non-residents of Canada, deaths of residents of Canada whose province or territory of residence was unknown and deaths for which age or gender of deceased person was unknown. Rates used in this table for the calculation of life expectancy are based on data tabulated by place of residence. Life expectancy for the Yukon, the Northwest Territories and Nunavut should be interpreted with caution due to small underlying counts.
3. Iceland: Data not available at the regional level.
4. Japan: TL2 data computed as the average value of TL3 regions.
5. Mexico: 2011-13: CONAPO. Population forecast 2010-50, *www.conapo.gob.mx*.
6. New Zealand: Life expectancy data presented for each year is based on registered deaths in the three years centred on that year. New Zealand life expectancy from abridged life tables. This may differ from data from complete life tables.
7. Spain: Data exclude Ceuta and Melilla
8. United States: 2010 data source is Measure of America calculations using mortality counts from the Centers for Disease Control and Prevention, National Center for Health Statistics. Mortality – All County Micro-Data File, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Population counts are from the CDC WONDER Database.

Metropolitan population

Country	Source	Years	Territorial level
EU22 countries[1]			
Australia	European Commission, Joint Research Centre (JRC); Columbia University, Center for International Earth Science Information Network - CIESIN (2015): GHS population grid, derived from GPW4, multitemporal (1975, 1990, 2000, 2015). European Commission, Joint Research Centre (JRC) [Dataset] PID: http://data.europa.eu/89h/jrc-ghsl-ghs_pop_gpw4_globe_r2015a	2014	FUA, Metropolitan area
Canada			
Chile			
Japan			
Korea			
Mexico			
Norway			
Switzerland			
United States			
Colombia			

Population in metropolitan areas is estimated by adding the population per square kilometre (of the GHS population grid) within the metropolitan boundaries.

1. EU22 countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom

Motor vehicle theft

Country	Source	Year	Territorial Level
Australia	Australian Bureau of Statistics (ABS), Recorded Crime - Victims, Australia (cat. no. 4510.0)	2015	2
Austria	Statistics Austria, Crime Statistics	2016	2
Belgium	Belgian Federal Police	2016	2
Canada[1]	Statistics Canada. CANSIM database, Table 252-0051	2016	2
Chile[2]	INE, Chile. Undersecretariat of Crime Prevention, Ministry of Interior and Public Safety.	2016	2
Czech Republic	Czech Statistical Office CZSO, Police of the Czech Republic	2016	2
Germany	Federal Criminal Office, Spatial Monitoring of the BBSR. German Police Crime Statistics (PCS)	2016	2
Denmark	Statistics Denmark, StatBank Table STRAF11: Reported criminal offences, Theft of vehicles series	2016	2
Estonia	Estonian Ministry of Justice	2016	2
Finland	Statistics Finland, Justice statistics	2016	2
France[3]	INSEE, Etat 4001 annuel, DCPJ.	2016	2
Greece	n.a.	2016	2
Hungary	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2016	2
Ireland	CSO, StatBank Ireland. Table CJQ02: Recorded Crime Offences by Garda Region	2016	2
Iceland	n.a.	-	-
Israel	Central Bureau of Statistics Israel	2016	2
Italy	ISTAT. Crimes reported by the police forces to the judicial authority MetaData : Crimes in total by type of crime	2013	2
Japan	National Police Agency Criminal Statistics. Publications of the Police Policy Research Center	2015	2
Korea	n.a.	-	-
Latvia	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2015	2
Luxembourg	n.a.	-	-
Mexico	INEGI National Census, State Justice Attorney data	2015	2
New Zealand[4]	Statistics New Zealand, Annual Recorded Offences for the latest Calendar Years (ANZSOC)	2014	2
Netherlands	n.a.	-	-
Norway	n.a.	-	-
Poland	National Police Headquarters of Poland	2016	2
Portugal	Ministry of Justice of Portugal - Directorate-General for Justice Policy, motor vehicle theft crimes recorded by the police.	2014	2
Slovak Republic[5]	Statistical Office of the Slovak Republic, regional database	2014	2

Motor vehicle theft *(cont.)*

Country	Source	Year	Territorial Level
Slovenia	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2012	2
Spain	National Institute of Statistics / Instituto Nacional de Estadística (INE)	2016	2
Sweden	Swedish National Council for Crime Prevention (Brå).	2014	2
Switzerland[6]	Federal Statistical Office (FSO). Police crime statistics	2016	2
Turkey	General Directorate of Security, General Commandership of Gendarme	2016	2
United Kingdom	n.a.	-	-
United States	Federal Bureau of Investigation, Crime in the United States. Table 4, by Region, Geographic Division and State	2013	2
Colombia	Policía Nacional, Colombia	2016	2
Peru	Ministerio del Interior - Oficina Estadística de la Policía Nacional del Perú y Dirección General de Gestión en Tecnologías de Información y Comunicación.	2016	2
Russian Federation	Federal State Statistics Service (Rosstat), datra according to the law-enforcement authorities	2014	2

1. Canada: total theft of motor vehicle, actual incidents.
2. Chile: data based on crimes known by police (called "casos policiales" in Spanish) excluding motor attempted theft of vehicles.
3. France: data includes car theft (index 35), theft of motor vehicles with two wheels (index 36) and theft of vehicles with cargo (index 34). Some motor vehicle thefts are recorded by the corresponding national institutions (such as central offices) of the police and gendarmerie. These thefts are not registered in a particular TL3 region, thus the national total does not fully correspond with the sum of the TL3 regions.
4. New Zealand: the number of offences police recorded for theft or unlawful taking of a motor vehicle. This includes instances where a vehicle is taken for a joy ride and later recovered, as well as instances where vehicles are taken permanently.
5. Slovak Republic: since 2005, data on NUTS 1 level do not necessarily match the sum of NUTS 2 level data because NUTS 1 data also include regionally unspecified offences recorded by Railway Police, Military Police, Corps of Prison and Court Guard, and Customs Director.
6. Switzerland: from 2009, police statistics on crime have been revised and are thus not comparable to the old police statistics; this translates into a break in series between 2008 and 2009.

Patents

Country	Source	Years	Territorial level
All countries[1, 2]	OECD REGPAT Database	1990-2015	2 and 3

1. The OECD REGPAT Database presents patent data that have been linked to regions according to the addresses of the applicants and inventors. For more information on the database, see: *www.oecd.org/dataoecd/22/19/40794372.pdf*.
2. A patent is generally granted by a national patent office or by a regional office that does the work for a number of countries, such as the European Patent Office and the African Regional Intellectual Property Organization. Under such regional systems, an applicant requests protection for the invention in one or more countries, and each country decides whether to offer patent protection within its borders. In this publication the patent data come from the WIPO-administered Patent Co-operation Treaty (PCT) which provides for the filing of a single international patent application that has the same effect as national applications filed in the designated countries. An applicant seeking protection may file one application and request protection in as many signatory states as needed.
   More info on PCT: *www.wipo.int/export/sites/www/pct/en/basic_facts/faqs_about_the_pct.pdf*.

PM2.5 particles concentration

Country	Source	Years	Territorial level
All countries	Data collected from OECD (2017) "Exposure to Air Pollution", OECD Environment Statistics (database) https://doi.org/10.1787/96171c76-en, data computation based on van Donkelaar, A., R.V Martin, M.Brauer, N. C. Hsu, R. A. Kahn, R. C Levy, A. Lyapustin, A. M. Sayer, and D. M Winker (2016), "Global Estimates of Fine Particulate Matter using a Combined Geophysical-Statistical Method with Information from Satellites, Models, and Monitors", Environ. Sci. Technol, http://pubs.acs.org/doi/abs/10.1021/acs.est.5b05833	2000-15	2, metropolitan areas

Population mobility among regions (total and young)

Country	Source	Years	Territorial level
Australia[1]	Australian Bureau of Statistics (ABS), ABS.Stat	2013-15	3
Austria	Statistics Austria, Migration statistics	2014-16	3
Belgium	FPS Economie/Statistics Belgium	2013-15	3
Canada	Statistics Canada. Cansim Table 051-0012	2014-16	2
Chile[6]	n.a.	-	-
Czech Republic	Czech Statistical Office CZSO	2014-16	3
Denmark	Statistics Denmark, StatBank, table FLY55	2014-16	3
Estonia	Statistics Estonia, Statistical database, table POR06	2013-15	3
Finland	Statistics Finland, Population Statistics, Migration	2014-16	3
France[6]	n.a.	-	-
Germany	Spatial Monitoring System of the BBSR. Periodic update of population statistics by the Federal Office of Germany and the Statistical Offices of the Federal States	2013-15	3
Greece	Hellenic Statistical Authority. Population-Housing Census (2001, 2011)	2011	3
Hungary	HCSO, Hungarian Central Statistical Office, Internal migration statistics based on the registration system of home addresses	2014-16	3
Iceland	Statistics Iceland, Internal migration	2012-14	3
Ireland[6]	n.a.	-	-
Israel	Central Bureau of Statistics Israel	2014-16	2
Italy	Istat, Iscrizioni e cancellazioni anagrafiche (changes of residence from/to italian municipalities)	2011-13	3
Japan	Statistics Bureau, Migrants by prefecture derived from the Basic Resident Registers	2014-16	3
Korea[2]	Statistics Korea, KOSIS database - Internal Migration Statistics	2014-16	3
Latvia	Central Statistical Bureau of Latvia	2013-15	3
Lithuania	Statistics Lithuania, Data sources – the State Enterprise Centre of Registers, the Population Register; the Ministry of the Interior.	2013-15	3
Mexico	INEGI. Censo de población y vivienda 2010	2015	3
Netherlands	Statistics Netherlands on Statline	2008-10	2
New Zealand[6]	Statistics New Zealand. Census of Population and Dwellings	2013	3
Norway	Statistics Norway. Statbank, table 01222: Population change (M)	2013-15	3
Poland	Central Statistical Office of Poland, PESEL register	2014-16	3
Portugal[3]	Statistics Portugal (INE), Census 2001 and 2011	2011	3
Slovak Republic	Statistical Office of the SR	2014-16	3
Slovenia	Statistical Office of the Republic of Slovenia, Ministry of the Interior - Central Population Register, Ministry of the Interior - Administrative Internal Affairs Directorate	2009-11	3
Spain	INE - Data provided by the delegate of the OECD Working Party on Territorial Indicators	2014-16	3
Sweden	Statistics Sweden, Central Office for Administrative and Electronic Public Services registration system	2014-16	3
Switzerland	Swiss Federal Statistical Office, 1990 to 2010: Annual Population Statistics (ESPOP), from 2011 onwards: Population and Households Statistics (STATPOP)	2014-16	3
Turkey	Turkish Statistical Institute (TurkStat), Address Based Population Registration System	2013-15	3
United Kingdom[4, 7]	National Statistical Office, Population Estimates	2013-15	3
United States[5]	Secretariat's calculation using Internal Revenue Service (IRS) Individual Master File, Statistics of Income.	2009-11	3
Brazil	IBGE, 1991, 2000 e 2010 Census, 2004-13: Pesquisa Nacional por Amostra de Domicílios - PNAD	2011-13	2
Russian Federation	Federal State Statistics Service (Rosstat) calculations based on Federal Migration Service data	2013-15	2

Data refer to domestic migration: inflows and outflows of population from one region to another region of the same country. They do not include international immigration and outmigration.

1. Australia: Regional internal migration covers the movement of people from one location to another within Australia. Regional internal migration estimates (RIME) are prepared for sub-state regions and captures moves over each financial year on an annual basis.
2. Korea: Sejong Province, new province created as of August 2012. Due to limited data availability, Sejong data have been aggregated in Chungcheongnam-do (KR053).
3. Portugal: 2011 census micro-data refer to flows between 31 December 2009 and 21 March 2011.
4. United Kingdom: data do not include Scotland and Northern Ireland.
5. United States: Secretariat's computation of inflows and outflows at TL3 level by aggregating county-to-county bilateral migration data from the IRS Individual Master File system, based on tax filing units. *www.irs.gov/uac/SOI-Tax-Stats-County-to-County-Migration-Data-Files*.
6. Chile, France and Ireland data not available at regional level.
7. Scotland and Northern Ireland not included in young immigrants data at regional level.

Population: Total, by age and gender

Country	Source	Years	Territorial Level
EU25 countries[1]	Eurostat, regional statistics, population at 1 January, table demo_r_pjangrp3	2000-17	3
Australia	Australian Bureau of Statistics, cat. no. 3235.0, Population Estimates by Age and Sex, Regions of Australia (ASGS 2011), population at 30 June	2001-16	3
Canada	Statistics Canada. CansimTable 051-0062. Population Estimates based on Standard Geographical Classification 2011, population at 1 July	2000-16	3
Chile[1]	INE, Chile. Population projection and estimates by sex and age. 1990-2020, average annual population	2000-17	3
Iceland	Statistics Iceland, population at 1 of January by municipality	2000-16	3
Israel[2]	Central Bureau of Statistics Israel	2000-17	3
Japan	Statistics Bureau, Current Population Estimates as of 1 October	2001-16	3
Korea	Statistics Korea, KOSIS database, yearly average projected population by age, population at 1 October	2001-16	3
Mexico	INEGI, mid-year estimates, Population and Housing Census (1990,95,00,05,2010), OECD estimates for inter-census years. As from 2011 data are based on population projection, population at 30 June	2000-10	3
New Zealand	Statistics New Zealand, Population Statistics. Boundaries at 1 January 2013. NZ.DOTSTAT (Tablecode 7501), population at 30 June	2000-16	3
Norway	Statistics Norway, population at 1 January; 2014 data collected from Eurostat	2000-17	3
Switzerland[2]	Swiss Federal Statistical Office: from Dec-2010 onwards (Population and Households Statistics (STATPOP) ; Dec-1990 to Dec-2009: Annual Population Statistics (ESPOP); break in series between 2010 and 2011	2000-17	3
Turkey[1, 2]	Turkish Statistical Institute (TurkStat). The source of 2007-17 data is Address Based Population Registration System (ABPRS) and de jure population	2001-13	3
United States	United States Census Bureau - State and County Population Estimates, Table PEPAGESEX, population at 1 July	2000-16	3
Brazil	Instituto Brasileiro de Geografia e Estatística, IBGE, census 1991, 2000, 2010	2004-14	2
China	China Statistical database - Age composition and dependency ratio of population table	2000-14	2
Colombia	DANE. Estimation of population 1985-2005 and projection of population 2005-2020 by department.	2000-16	2
Lithuania	Eurostat regional statistics, population on 1 January, table demo_r_pjangrp3	2000-17	3
Peru		2000-15	2
Russian Federation	Federal State Statistics Service (Rosstat). Number of de-jure (resident) population on subjects of the Russian Federation	2000-15	2
Tunisia	Statistiques Tunisie (INS)	2001-16	3
South Africa	Statistics South Africa, population estimates for the period 2002-2017 based on 2011 Census	2002-15	2

1. First available year for population by age: Chile and Romania; 2002; Netherlands 2003; Turkey 2008
2. Population at 31 December restated at 1 January of the following year by the OECD.

Research and development (R&D) expenditure and personnel

Country	Source	Years	Territorial level
EU25[1]	Eurostat, Regional Science and technology Statistics, R&D expenditures and personnel, Total intramural R&D expenditure (GERD) by sector of performance and region.	2001-15	2
Australia[2, 3]	Australian Bureau of Statistics, tables: 8104.0 - Research and Experimental Development, Businesses 8109.0 - Research and Experimental Development, Government and Private Non-Profit Organisations 8111.0 - Research and Experimental Development, Higher Education Organisations	2000-15	2
Canada[2]	Statistics Canada. CANSIM database, Table 358-0001 - Gross domestic expenditures on research and development, by performer sector	2000-15	2
Chile[2]	Instituto Nacional de Estadísticas (INE) Chile, Survey of Expenditure and Personnel in R&D	2009-16	2
Iceland	n.a.	-	-
Israel[2]	Central Bureau of Statistics	2007-08	2
Japan	n.a.	-	-
Korea[2]	Korea Institute of Science and Technology Evaluation and Planning (KISTEP)	2000-16	2
Mexico	n.a.	-	-
New Zealand	n.a.	-	-
Norway	Eurostat, Regional Science and Technology Statistics, R&D expenditures and personnel, Total intramural R&D expenditure (GERD) by sector of perform qance and region.	2001-15	2
Switzerland	Eurostat, Regional Science and Technology Statistics, R&D expenditures and personnel, Total intramural R&D expenditure (GERD) by sector of performance and region.	2008;2012	2
Turkey	n.a.	-	-
United States	National Science Foundation, National Center for Science and Engineering Statistics. Science and Engineering State Profiles www.nsf.gov/statistics/states/#ui-tabs-4.	2000-14	2

Methodology source: OECD (2015), Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development, The Measurement of Scientific, Technological and Innovation Activities, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264239012-en*. Gross Domestic Expenditure on R&D (GERD) is the total domestic expenditure on R&D performed in the region or country during a given period. GERD is disaggregated in four sectors: business enterprise, government, higher education and private and non-profit. The Business Enterprise sector includes all firms, organisations and institutions whose primary activity is the market production of goods or services (other than higher education) for sale to the general public at an economically significant price. It also includes the private non-profit institutions mainly serving the above mentioned firms, organisations and institutions. The Government sector includes all departments, offices and other bodies that provide, but normally do not sell to the community, those common services, other than higher education, which cannot otherwise be conveniently and economically provided, as well as those that administer the state and the economic and social policy of the community. (Public enterprises are included in the business enterprise sector). It also includes non-profit institutions controlled and mainly financed by government, but not administered by the higher education sector. The higher education sector is comprehensive of all universities, colleges of technology and other institutions of post-secondary education, whatever their source of finance or legal status. It also includes all research institutes, experimental stations and clinics operating under the direct control of or administered by or associated with higher education institutions. The private non-profit sector includes non-market, private non-profit institutions serving the general public, private individuals and households.

1. EU-25 countries: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom. First available year: 2001 for Czech Republic; 2002 for Austria, Belgium and Ireland; 2003 for Germany and Slovenia, 2005 for Netherlands and United Kingdom; 2007 for Denmark.
2. Data collected from OECD, Research and Development Statistics Database, *http://oe.cd/rds*, April 2018.
3. Australia: 2015 R&D Business expenditures for Australia refer to the 2015-16 fiscal year.
4. Switzerland: only Business R&D expenditure.

Rooms per person (number of)

Country	Source	Year	Territorial level
Australia	Australia Bureau of Statistics, table 4130.0	2016	2
Austria	Statistics Austria, Microcensus Housing Survey	2016	2
Belgium	Eurostat, Regional Statistics	2012	2
Canada	Statistics Canada	2011	2
Chile	n.a.	2002	-
Czech Republic	Czech Statistical Office, EU SILC	2016	2
Denmark	OECD Regional Questionnaire / information provided by the delegate of the Working Party on Territorial Indicators	2014	2
Finland	Statistics Finland,	2012	2
France	Insee, Population census	2010	2
Germany	Eurostat, Regional Statistics	2016	2
Greece	Hellenic Statistical Authority, Population - Housing Census	2011	NUTS 1
Hungary	Hungarian Central Statistical Office, Population micro-census.	2016	2
Iceland	n.a.	-	-
Ireland	Eurostat, Regional Statistics	2012	2
Israel	Central Bureau of Statistics Israel	2016	2
Italy	ISTAT, Population and housing Census	2011	2
Japan	Statistics Bureau of Japan	2013	2
Korea	Statistics Korea, Housing Census General	2010	2
Mexico	National Institute of Statistics and Geography (INEGI)	2015	2
Netherlands	Eurostat, Regional Statistics	-	-
New Zealand	Statistics New Zealand	2013	2
Norway	Eurostat, Regional Statistics	2012	2
Poland	OECD estimates based on Central Statistical Office - dwelling stock by location	2012	2
Portugal	Statistics Portugal, Population and housing census	2011	2
Slovak Republic	Statistical Office of the SR, Household Budget Survey	2016	2
Slovenia	Information provided by the delegate of the Working Party on Territorial Indicators	2012	2
Spain	National Institute of Statistics / Instituto Nacional de Estadística (INE). Survey of Living Conditions (LFS)	2016	2
Sweden	Eurostat, Regional Statistics	2012	2
Switzerland	Federal Statistical Office, GWS	2015	2
Turkey	Information provided by the delegate of the Working Party on Territorial Indicators	2014	2
United Kingdom (1)	Eurostat, Regional Statistics	2011	2
United States	OECD estimates based on American Community Survey (ACS), Tables B25017 and B25008	2016	2
Tunisia	INS	2014	2

1. United Kingdom: Regional values available except for Scotland

Subnational government expenditure, revenue, investment and debt

Country	Source	Years	Territorial level
All countries[1, 2, 3, 4, 5]	OECD National Accounts	2016	-

1. Data at country level are derived mainly from the OECD National Accounts harmonised according to the new standards of the System of National Accounts (SNA) 2008. They are complemented by data from Eurostat, IMF (Chile) and national statistical institutes for some countries or indicators (in particular, territorial organisation). Subnational government is defined here as the sum (non-consolidated) of subsectors S 1312 (federated government) and S 1313 (local government).
2. Total public expenditure comprises current expenditure (compensation of employees, intermediate consumption, social expenditure, subsidies and other current transfers, taxes, financial charges, adjustments) and capital expenditure (investments plus capital transfers (i.e. investment grants and subsidies in cash or in kind made by subnational governments to other institutional units).
3. Total public revenue comprises tax revenue (see below), transfers (current and capital grants and subsidies), tariffs and fees, property income and social contributions.
   Tax revenue comprises taxes on production and imports (D2), current taxes on income and wealth (D5) and capital taxes (D91). It includes both own-source tax revenue (or "autonomous") and tax revenue shared between central and subnational governments. NB: the SNA 2008 has introduced some changes concerning the classification of some shared tax revenues. In several countries, certain tax receipts have been recently reclassified as transfers and no longer as shared taxes.
4. Public investment includes gross capital formation and acquisitions, less disposals of non-financial non-produced assets. Gross fixed capital formation (or fixed investment) is the main component of investments. NB: since the new standards of the SNA 2008, expenditures on research and development and weapons systems are included in gross fixed capital formation.
5. The General Government gross debt definition based on the SNA 2008, includes the sum of the following liabilities: currency and deposits + debt securities + loans + Insurance pension and standardised guarantees + other accounts payable. Most debt instruments are valued at market prices. NB: the OECD definition differs from the one defined in the EU Maastricht protocol which is restricted to the sum of the first three items (i.e. mainly borrowing).

Voter turnout

Country	Source	Last Year	Territorial level
Australia	Australian Electoral Commission. Federal election	2016	2
Austria	Austrian Federal ministry of interior, parliamentary elections	2013	2, 3
Belgium	Federal Portal of Belgium. Parliamentary elections	2014	2
Canada	Elections Canada, Election Results 19 October 2015 - enr.elections.ca	2015	2
Chile	INE, Chile. Electoral service (Servel)	2013	2
Czech Republic	Czech Statistical Office CZSO, Results of Election to the Chamber of Deputies of the parliament	2013	2, 3
Denmark	Danish general election - http://electionresources.org/dk/data	2015	2, 3
Finland	Statistics Finland, Presidential elections, second round	2012	2
Germany	Data sent by the German delegate of the OECD Working Party on Territorial Indicators, German Federal election	2013	2
Greece	Ministry of Interior, Parliamentary Elections 2012 - www.ypes.gr/en/Elections/	2012	2
Hungary	Hungarian National Election Office	2014	2, 3
Iceland	Results of general elections - www.statice.is/statistics/population/elections/general-elections	2013	2, 3
Ireland	Houses of the Oireachtas - www.oireachtas.ie	2011	2, 3
Israel	Central Bureau of Statistics Israel	2015	2, 3
Italy	Ministero dell'interno, Dipartimento per gli Affari Interni e Territoriali. Servizi Elettorali	2013	2
Japan	Statistics Bureau (2014: Representatives elections)	2014	2, 3
Korea	Korean National Election Commission	2012	2, 3
Mexico	INEGI, general elections	2015	2
Netherlands	Dutch Electoral Council (Kiesraad) - www.kiesraad.nl	2012	2
Norway	Statistics Norway	2017	2, 3
Poland	Central Statistical Office of Poland, National Election Commission	2015	2
Portugal	Ministry of Internal Administration of Portugal- Directorate-General of Internal Administration	2015	2, 3
Slovak Republic	Statistical Office of the SR	2016	2, 3
Slovenia	Republic of Slovenia Early elections for deputies to the National Assembly	2014	2
Spain	INE	2016	2, 3
Sweden	Swedish Election Authority	2014	2, 3
Switzerland	Statistique suisse - www.politik-stat.ch/nrw2015wb_fr.html	2015	2, 3
Turkey	Data sent by the Turkish delegate of the OECD Working Party on Territorial Indicators	2015	2, 3
United Kingdom	Data sent by the UK delegate of the OECD Working Party on Territorial Indicators	2015	2
United States	US Census. Reported Voting and Registration of the Citizen Voting-Age Population	2016	2

ANNEX C

Indexes and estimation techniques

Gini index

Definition: Income inequality among individuals in regions and metropolitan areas are measured by an unweighted Gini index. The index is defined as:

$$GINI = \frac{\sum_{i=1}^{N}(2i - N - 1)y_i}{N\sum_{i=1}^{N} y_i}$$

where N is the number of households, and y_i is the value of variable y (e.g. equivalised household disposable income) in household j when ranked from low (y_1) to high (y_N) among all households within a metropolitan area.

The index ranges between 0 (perfect equality: y is the same in all households) and 1 (perfect inequality: y is zero in all households except one).

Theil entropy index

Definition: Regional disparities are also measured by a Theil entropy index, which is defined as:

$$Theil = \sum_{i=1}^{N} \frac{y_i}{\bar{y}} ln\left(\frac{y_i}{\bar{y}}\right)$$

Where N is the number of regions in the OECD, y_i is the variable of interest in the i-th region (i.e. household income, life expectancy, homicide rate, etc.) and $\bar{y}$ is the mean of the variable of interest across all regions.

The Theil index can be easily decomposed in two components: one is the disparities within subgroups of regions – where for example is subgroup is identified by a set of regions belonging to a country; another one is the disparities between subgroups of regions (i.e. between countries). The sum of these two components is equal to the Theil index.

In order to decompose the Theil index, let's start by assuming *m* groups of regions (countries). The decomposition will assume the following form:

$$Theil = \sum_{j=1}^{M}\sum_{i=1}^{N} s_j \frac{y_{ij}}{\bar{y}_j} ln\left(\frac{y_{ij}}{\bar{y}_j}\right) + \sum_{j=1}^{M} s_j ln\left(\frac{y_j}{\bar{y}}\right)$$

Where the first term of the formula is the *within* part of the decomposition it is equal to the weighted average of the Theil inequality indexes of each country. Weights, s_i, are computed as the ratio between the country average of the variable of interest and the OECD

average of the same variable. The second term is the between component of the Theil index and it represents the share of regional disparities that depends on the disparities across countries.

Interpretation: The Theil index ranges between zero and ∞, with zero representing an equal distribution and higher values representing a higher level of inequality.

The index assigns equal weight to each region regardless of its size; therefore differences in the values of the index among countries may be partially due to differences in the average size of regions in each country.

Methodology to estimate GDP at the metropolitan level

The proposed methodology uses GDP per capita values in TL3 regions and Metropolitan Statistical Areas (MSA) as data inputs (MSA are used only for Australia, Canada, and the United States) and the distribution of the population based on the GHS population grids.

Using ArcMap 10.2.2, the suggested methodology is composed of three main steps:

- Convert the TL3 and MSA polygons (that contain the GDP per capita values) to a raster – use the GHS population grid to define the cell size of the new GDP per capita raster;
- Using the previously created GDP per capita raster and the GHS population grid, multiply the GDP per capita of a square km by the corresponding population in the same square km; this would result in a GDP raster (a grid that shows GDP per square kilometre);
- With the use of the polygons of the metropolitan areas, calculate the sum of the square km's GDP values lying within the metropolitan boundaries.

It has to be noted that the estimates of GDP in the metropolitan areas do not adhere to international standards; the comparability among countries relies on the use of the same methodology applied to areas defined with the same criteria.

ANNEX D

Subnational government finance

General and subnational government

Data refer to the general and subnational government finance data included in the OECD National Accounts harmonised according to the System of National Accounts (SNA08), with the exception of Chile and Australia, extracted from IMF Government Statistics. see *www.oecd.org/std/na/*. Eurostat and International Monetary Fund data were also used.

General government (S.13) includes four sub-sectors: central/federal government and related public entities (S.1311); federated government ("states") and related public entities relevant only for countries having a federal or quasi-federal system of government (S.1312); local government i.e. regional and local governments and related public entities (S.1313), and social security funds (S.1314). Data are consolidated within these four sub-sectors, as well as within each subsector (neutralisation of financial cross-flows).

The subnational government (SNG) is defined as the sum of state governments (S.1312) and local (regional and local) governments (S.1313). For Australia and United States, there is no breakdown available at subnational level between local and state government data.

Expenditure

Total public expenditure comprises current and capital expenditure:

- Current expenditure: compensation of employees (staff expenditure) + intermediate consumption + social expenditure (social benefits and social transfers in kind via market producers) + subsidies + other current transfers + paid taxes + financial charges (including interest) + adjustment for the net equity of households in pension fund reserves;
- Capital expenditure is the sum of capital transfers and investment.
- Capital transfers comprise investment grants and subsidies in cash or in kind made by subnational governments to other institutional units.
- Investment is defined as gross capital formation and acquisitions less disposals of non-financial non-produced assets during a given period. Gross fixed capital formation (GFCF or fixed investment) is the main component of investment). Investment consists of both positive and negative values. Since the new standards of the SNA 2008, expenditures on research and development and weapons systems are included in GFCF.
- The classification of Functions of Government (COFOG) includes 10 functions: General public services; Defence; Public order and safety; Economic affairs; Environmental protection; Housing and community amenities; Health; Recreation, culture and religion; Education; Social protection.

Revenue

Total public revenue comprises tax revenues, transfers (current and capital grants and subsidies), tariffs and fees, property income and social contributions.

- Tax revenue comprises taxes on production and imports (D2), current taxes on income and wealth (D5) and capital taxes (D91). It includes both own-source tax (when SNGs have full or significant control over the tax base and rates) and shared tax (tax base and rates are defined nationally; tax proceeds are shared between the central and subnational governments according to specific redistribution mechanisms). Tax sharing can be also a combination of both arrangements (e.g. local tax surcharges on national taxes).
- NB: the SNA 2008 has introduced some changes concerning the classification of some shared tax revenues. In several countries, certain tax receipts have been reclassified as transfers and no longer as shared taxes (e.g. Austria, Slovak Republic, Estonia, Spain).
- Grants and subsidies: current and capital transfers and subsidies.
- Tariffs and fees: total sales (market output and output for own final use) and payments for non-market output.

Fiscal balance

Fiscal balance is the difference between government revenues and expenditure. A fiscal deficit occurs when, in a given year, a government spends more than it receives in revenues. A government runs a surplus, instead, when revenues exceed expenditures.

Debt

Based on the SNA 2008, gross debt includes the sum of the following liabilities: currency and deposits + debt securities + loans + insurance pension and standardised guarantees + other accounts payable. Most debt instruments are valued at market prices. Some liabilities such as shares, equity and financial derivatives are not included in this definition.

These data are not always comparable across countries due to different definitions or treatment of debt components (e.g. pensions) or valuation (market vs. nominal prices).

The SNA definition of gross debt differs from the one applied under the Maastricht Protocol which excludes insurance pension and other accounts payable and thus corresponds roughly to borrowing. In addition, "Maastricht debt" is valued at nominal prices and not at market prices.

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